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A Community of Users on Secure, Safe and Resilient Societies

Mapping H2020 and ISF projects funded under 2014-2015 programmes

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Contents

1. EXECUTIVE SUMMARY

In a world facing a growing risk of man-made and natural disasters resulting from increasingly frequent and severe natural, industrial and man-made hazards, the security of citizens, infrastructure and assets and the environment protection have become a high priority in the European Union. Strengthening capacities in disaster risk / crisis management and improving resilience in the fields of CBRN-E (Chemical, Biological, Radiological, Nuclear and Explosive) and natural and man-made disaster management, as well as in the areas of border security and the fight against crime and terrorism, represent key EU policy and research challenges.

The overall EU security policy framework covers many different sectors, which require coordination among various communities. In this respect, policy development and implementation rely on effective interactions among policy-makers, research, industry (including SMEs) and operational actors (first responders, civil protection units, police forces etc.) in the EU Member States. This requires a proper exchange of information and communication about either policy updates or (research) project results, which should be tailor-made to different sectors concerned with the goal of enhancing the transfer of research solutions or new policy recommendations to users in a timely and relevant fashion. Such exchanges are also needed to identify and address users' needs regarding research, technologies and policies, in order to better design funding programmes at an EU level. Finally, a proper transfer of knowledge from research to policy and operational sectors may have a positive impact on policy formulation and review.

However, the policy complexity, the high number of research projects, the difficulties associated with bringing innovative tools to the market and the lack of "interfacing" mechanisms make it difficult to efficiently reach these goals. In order to improve this situation, the European Commission is funding various types of projects, including large-scale demonstration projects. These projects, along with different policy committees and think-tanks, develop networks with user's groups in the Member States which have great potential but are currently too fragmented. In this respect, the need to build a "**Community of Users**" in the EU based on existing user's communities has been expressed in various fora. Discussions with different actors have hence taken place over the past months and a mapping of policies and research projects has been carried out in light of operational features regarding the overall risk management cycle (from preparedness / prevention, detection / surveillance, response / recovery) and the need to ensure a proper transfer (and implementation) of research outputs to users.

This working paper is built up on a mapping exercise carried out in 2016 about FP7 projects[1] which presented the reasoning for the development of a Community of Users on Secure, Safe and Resilient Societies. It focuses on mapping H2020 projects funded under the 2014-2015 calls for proposals. The H2020 projects are complemented by capacity-building projects funded in 2014 and 2015 by the Internal Security Fund Programme[2]. It will be complemented by a mapping of H2020 projects resulting from the 2016-2017 calls for proposals and capacity-building projects funded by different EU instruments (ISF, ECHO, LIFE+, INTERREG).

This document does not reflect a formal position of the European Commission.

1 A Community of Users on Secure, Safe and Resilient Societies (CoU) – Mapping EU Policies and FP7 research for enhancing partnerships in H2020

2 Please note that ISF projects classification might differ from the taxonomy presented in this document. Visit ec.europa.eu/home-affairs/financing/fundings/security-and-safeguarding-liberties/internal-security-fund-police_en for more information on ISF projects.

2. OVERVIEW OF TASKS AND OBJECTIVES

2.1 Background

The management of disaster risks and crises of different kinds (unintentional or intentional man-made disasters, natural hazards) as well as other security / safety issues in the areas of border control, supply chains and crime are ruled by a number of international, EU and national policies covering various sectors and operational features such as preparedness, prevention, detection, surveillance, response, and recovery. A wide range of research and technological developments, as well as capacity-building and training projects, are striving to support the implementation of these policies. However, the complexity of the policy framework and the wide variety of research, capacity-building and training initiatives often leads to a lack of awareness about policies and/or project outputs by the among users, namely policy-makers, scientists, industry/SMEs and practitioners, e.g. civil protection units, medical emergency services and police departments. Highly fragmented information often leads to poor awareness of policy requirements by research and industry communities and poor transfer of research results to policy and stakeholders communities.

2.2 Objectives

In the light of the above, there is a strong need to establish a mechanism enabling better information exchanges with regular updates for all possibly interested organisations and effective interactions among projects and different communities. To better understand the type of information that should be considered and how it fits to a larger "architecture", a mapping exercise was carried out to highlight the scientific and technological challenges of key related policies and their possible matching by research projects funded by the 7th Framework Programme. A first step is to build up the framework of science-policy-industry-practitioner's interactions and to figure out how an efficient mechanism of information transfer could be made operational at EU and national levels in the light of Horizon 2020 developments. This is the core objective and mission of the **Community of Users on Secure, Safe and Resilient Societies**. More specifically, five key objectives are defined, namely:

1. Ensuring that research programming (particularly H2020) takes account practitioners' needs, thereby promoting research results that are relevant to them;
2. Identifying the most promising tools, methods, guidelines (including those developed in FP7 and H2020 projects) that have the potential to be taken up by practitioners;
3. Support the competitiveness of EU industry by enhancing the market for research results;
4. Ensuring that the expertise of practitioners is available to policy makers, thereby facilitating the policy-making process;
5. Facilitating the implementation of policy.

2.3 Logistics

The agenda and organisation of the Community of Users is under the responsibility of DG HOME.B4 in close coordination with various DGs and Agencies, as well as with REA and relevant projects.

In its first phase (2014-2015), the development of the Community of Users has been closely linked to two demonstration projects (EDEN[3] and DRIVER[4]) in terms of logistics, i.e. CoU meetings were organised under the umbrella of these two projects, while all other tasks were coordinated with other services. From 2016 to date, logistics are now carried out under a service contract with the development of a dedicated website. The first phase of the CoU development has focused on disaster risk and crisis management. The scope of the mapping has been enlarged to encompass all the areas covered by research on secure, safe and resilient societies.

2.4 Governance and knowledge transfer

The governance of the Community of Users and related knowledge transfer have to be established in the lights of the different interactions among different categories of actors, linking research, industry, policy sectors and practitioners.

In this respect, several levels of governance need to be considered: (1) a "horizontal" level in the framework of which interactions among research, industry, policy-makers and practitioners are established in a coordinated way at different scales, i.e. EU, national and regional; (2) a "vertical" level which establishes operational links among the EU, national and regional levels through appropriate information relays, synergies and demonstration activities.

a. Horizontal transfer

- **Science to science**: sharing information and developing interactions among H2020 projects (via the Research DGs) dealing with specific themes to develop a critical mass and reduce fragmentation, and bring tools/technologies to the market through links with industrial stakeholders. EU-funded projects respond to topics which are generally based on well-defined policy hooks. We might hence expect that projects supporting common policy goals will establish synergies, which is rarely the case without a push from the Commission owing to various considerations (IPR and classified information in particular). Here again, sharing information and developing interactions on a regular basis should become a practice that the Commission asks of projects.
- **Policy to policy**: policy interactions in the light of policy implementation needs, including the respective DGs, and establishing links with Member States through formal committees (e.g. CBRN-E Advisory Group, Civil Protection Committee, Seveso Committee etc.). While International and EU policies are developed in close consultation among different sectors, in practice few interactions take place at the implementation level among sectors within the Member States. This is partly due to insufficient sharing of information and joint actions.

3 https://www.eden-security-fp7.eu/

4 http://driver-project.eu/

- **Science to policy**: formatting/translation of research information in a way which is tailor-made to policy-makers and ultimately user's needs, responding to well specified technical challenges. This is obviously directly linked to the above, with the requirement for the scientific community to format/translate research information in a way which is tailor-made to policy applications, basically responding to well specified technical challenges. This is the subject of the mapping described in this document.
- **Policy to science**: identification of research needs from policy-makers, stakeholders and practitioners on the short to long term and communication of these needs to be taken into account in research programming, development and implementation. An essential component of the policy to science interaction is the capacity for policy-makers to identify research needs on the short to long term and communicate these needs in anticipation to the research community so that programming, research development and implementation can match the policy timeline (e.g. access to the scientific state-of-the-art, short-term research / capacity building, longer term research goals, pre- and co-normative research).
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b. Vertical transfer

- **International/EU to National**: in the research sector, interactions through H2020 consortia; in the policy sector, interactions through Committees representing Member States and stakeholders, working out appropriate relays to national authorities and stakeholders based on well-formatted information. At international/EU level, policies are elaborated by relevant organisations (e.g. UN for various conventions and European Commission for security-related EU policies). The links to the National level take place through Committees in which Member States are represented. There is a need to ensure that these Committees be informed on similar grounds about science & policy developments.
- **National to Regional/Local**: information relays through interactions with regional research partners and regional authorities as well as practitioner's networks and associations. Once representatives of the Member State's Committee are duly informed, it is to be expected that appropriate relays with regional / local implementers will then take place under the MS responsibility. This also requires a level of coordination which depends upon the willingness and capacity of each Member State. This level of interaction is less well defined than the EU level because of different settings within the Member States.
- **Regional to National/EU**: return of experiences from either practitioners involved in EU-funded projects or practitioners informed via national channels to the EU level.

2.5 Who are the users?

Fields concerned by security, safety and resilience for societies are themselves scattered into many different disciplines and sectors. To simplify, we will distinguish five main categories of users: (a) Policy–makers; (b) Scientists; (c) Industry (including SMEs); (d) Training and Operational units; and (e) NGOs and general public:

a. Policy-makers and stakeholders

- At the international level, UN bodies are closely working with the EU in the fight against crime and terrorism (UNICRI), disaster risk reduction (UN-ISDR), transboundary industrial accidents (UNECE), environment protection (UNEP) etc.
- At the EU level, the main policy DGs concerned with Crisis Management are DGs HOME (migration and home affairs), ECHO (civil protection), SANTE (health), GROW (enterprise), ENV (environment), CLIMA (climate action), ENER (energy), MOVE (transport), TAXUD (customs), TRADE (export, trade), EEAS/FPI (external security, foreign policy instrument) and the SG (Secretariat General), as well as the Joint Research Centre (JRC) as supporting DG, see section 5
- At the Member State's level, Ministries of Defence, Interior, Foreign Affairs, Civil Protection, Environment, Research and Industry, as well as Agencies and Regional Authorities, are concerned
- Often working at the interface between policy and science, various stakeholders are involved in bridging interests of different communities, e.g. consultancy companies

b. Scientists

- Security research involves a wide range of scientific disciplines which have to interact, ensure complementarity and build interdisciplinary networks
- Different types of scientists are to be considered (universities, research institutes, research units linked to Defence/Interior ministries or agencies)

c. Industry (including SMEs)

- Many industry branches and stakeholders are involved in the areas of defence, forensics, civil protection etc. Research results can benefit most first responders
- Different communication approaches to be followed towards large industries and SMEs often disconnected from discussions at EU level

d. Practitioners

- First responders, i.e. fire brigades, emergency services, police forces, civil protection units, military units, laboratories, water/flood management etc. as well as Decision-makers (at national or regional levels)
- Training centres for first responders, command control centres

e. NGOs and general public

- NGOs, Civil Society Organisations, public at large, education (schools) and training

While some of the above actors in categories a, b and c are used to participate in international meetings, this is less frequent for SMEs (in category c) and even less for actors in categories d and e. New ways must be found to ensure that information may freely circulate "horizontally" as well as "vertically" (see p. 7) in order to fertilize all project deliverables while, at the same time, maturing them to the final operational phase (also called "usefulness & use") by end-users, and integrating them into appropriate policy implementation and development.

3. POLICY BACKGROUND

3.1 General framework

A large span of sectors and policies cover secure, safe and resilient society's issues in a direct or indirect way, either by providing legally-binding frameworks of actions by EU Member States in the form of Directives, general frameworks in the form of Communications or technical specifications in the form of Decisions, for example.

Crisis Management policies follow an integrated approach for the management of natural and man-made hazards focusing on disaster risk reduction (prevention and preparedness) and disaster response. The policy is mainly represented by the EU Civil Protection Mechanism (UCPM)[5], and the operational dimension is coordinated by the Emergency Response Coordination Centre (ERCC). Disaster risk management is also addressed through the EU Internal Security Strategy[6] and the resulting European Agenda on Security adopted in April 2015[7] (DG HOME) and Consumer Health Protection policies (DG SANCO)[8]. In addition, climate-related disasters are covered by environmental and climate policies (DG ENV, in particular the Flood Directive[9] and DG CLIMA through the EU climate change adaptation strategy[10]). Finally, intergovernmental agencies are also involved in security policies, namely the European External Action Service (EEAS) – which implements the EU Common Foreign and Security Policy – and Europol – which is the EU Law Enforcement Agency. Both agencies assist EU Member States. There are also links with the Council Decision 2014/415/EU on the arrangements for the implementation by the Union of the solidarity clause, which covers response, situational awareness and analysis and threat assessment at Union level.

Other key EU policies concern industrial competitiveness and innovation, namely the EU Industrial Policy[11] which aims to boost industrial competitiveness and innovation (thus the access to market of developed technologies) and the EU research policy represented by Horizon2020[12].

5 Decision 1313/2013

6 Internal Security Strategy for the European Union: Towards a Eropean Security Model, 5842/2/2010

7 The European Agenda on Security, COM(2015) 185 final

8 Decision 1082/2013

9 Directive 2007/60/EC

10 COM (2013) 216 final

11 COM(2012) 417 final

12 http://ec.europa.eu/programmes/horizon2020/en/

With regards to CBRN-E, the key EU policy is represented by the CBRN Action Plan[13] (DG HOME) and the EU Action Plan on Enhancing the Security of Explosives[14] which expired at the end of 2015 and which is now under revision; the Regulation 98/2013 on the Marketing and Use of Explosives Precursors[15] has entered into force and is directly applicable to all MS. Other EU policies include CBRN as a focal point, namely in the sectors of Civil Protection and Consumer Health Protection (see above), as well as Energy Infrastructure and Transport Networks[16] (DGs ENER and MOVE), Customs[17] (DG TAXUD), Environment and Industrial Risks[18] (DG ENV) and International Cooperation, e.g. CBRN-E Centres of Excellence (DG DEVCO).

Complementary to EU policies, international policies are also active in Disaster Risk and Crisis Management. In the case of CBRN-E, various conventions exist, namely the United Nations Security Council Resolution 1540, the Chemical Weapon Convention (CWC controlled by the Organisation for the Prohibition of Chemical Weapons, OPCW), the Biological and Toxin Weapon Convention (BTWC without control mechanisms), and the Nuclear Non-proliferation Treaty (NPT controlled by the International Atomic Energy Agency, IAEA). In the field of Disaster Risk Management, Disaster Risk Reduction has been the core action line of the United Nations Hyogo Framework for Action on how to mitigate the impact of natural and man-made disasters, now continued by the Sendai Framework for Action setting priorities for the 2015-2025 period, among which the promotion of a better understanding of disaster risk management through the building, sharing and development of knowledge and the strengthening of the policy-science interface at local, national, regional and global levels.

The implementation of these policies represents a complex and ambitious challenge as they involve a wide variety of players whereas each Member State often follows specific national approaches (national action plans) for dealing with crises and are also differently organised in terms of disaster risk management capabilities. The EU framework represents a means and a real opportunity to discuss possible ways to improve coordination among the various national approaches and develop a common EU vision strengthened by a joint strategy in this field. The development of a Community of Users is, in this respect, an essential component to bring together key scientific, policy and industry actors, as well as other stakeholders (e.g. first responders, police representatives, fire fighters, civil protection units) around this common vision and strategy. This is closely linked to the EU industrial policy[19] under the responsibility of DG GROW, the EU research policy[20] coordinated by DG R&I and involving DG HOME (Secure Societies Programme), DG CNECT and JRC, the EU civil protection policy managed by DG ECHO, as well as the EU environmental and climate policies coordinated by DG ENV and CLIMA respectively.

13 COM(2009) 273 final and COM(2014) 247 final

14 Doc.8311/08/Council of the European Union, EU Action Plan on Enhancing the Security of Explosives

15 Regulation 98/2013

16 Regulation 347/2013 and Decision 661/2010

17 COM(2012) 793 final

18 Directive 2012/18/EU

19 COM (2010) 2020 final

20 COM (2011) 152 final

3.2 EU Civil Protection Mechanism and related international policies

The **UCPM**[21] aims to facilitate reinforced cooperation between the EU and the Member States and to facilitate coordination in the field of civil protection, in order to improve the effectiveness of systems for preventing, preparing for and responding to natural and man-made disasters. It supports and complements the efforts of the Member States for the protection, primarily of people but also of the environment and property, including cultural heritage, in the event of natural and man-made disasters, acts of terrorism and technological, radiological or environmental accidents, including marine pollution. Built upon these policy instruments, the UCPM is about developing an integrated approach to disaster management. The EU action is based on the principles of solidarity. The overall mechanism takes due consideration of laws and international commitments, and exploit synergies with relevant Union initiatives such as the European Earth Observation Programmes (Copernicus), the European Programme for Critical Infrastructure Protection (EPCIP) and the Common Information Sharing Environment (CISE). The mechanism is based on the Emergency Response Coordination Centre (ERCC) and the European Emergency Response Capacity (EERC) in the form of voluntary pool of pre-committed capacities from the Member States, trained experts, a Common Emergency Communication and Information System (CECIS) managed by the Commission and contact points in the MS. It also recognises the role of regional and local authorities in disaster management. Outside the Union, disaster response is coordinated with the United Nations and other relevant international actors with reference to Council Regulation No 1257/96 concerning humanitarian aid[22]. Finally, the use of military means under civilian leads as a last resort may constitute an important contribution to disaster response.

On technical grounds, the UCPM is working towards a general policy framework on disaster risk prevention aimed at achieving a higher level of protection and resilience against disasters by preventing or reducing their effects and by fostering a culture of prevention. From this perspective, it promotes the review of risk assessment, risk management planning conducted at national/regional level and the development of an integrated approach, linking risk prevention, preparedness and response actions. On the basis of information received from the EU Member States, the European Commission establishes and regularly updates a cross-sectoral risk overview. Among its priorities is the action to 'improve the knowledge base on disaster risks and facilitate the sharing of knowledge, best practices and information[23].

The UCPM is closely related to the **Sendai Framework for Action 2015-2025**[24] "Building the resilience of nations and communities to disasters" which is the successor of the Hyogo Framework for Action adopted by 168 UN Member States that voluntarily committed to work towards achieving its objectives, in particular improving disaster resilience and disaster risk reduction as a necessary ingredient for the achievement of poverty reduction and sustainable development. The Sendai Framework for Action sets out an ambitious set of priorities to place disaster risk reduction as a key element of sustainable development efforts, to define further steps to reduce existing and emerging risks and foster disaster resilience. As stressed in Council Conclusions on this matter, the EU supports a framework which strengthens the contribution of disaster risk management to smart, sustainable and inclusive growth by promoting the use and development of innovative technologies and encouraging a more systematic and reinforced science-policy interface in disaster risk management. These objectives are supported by IPCC recommendations expressed in the special report on extreme events[25].

21 Council Decision 2007/779/EC, OJ L 314, 1.12.2007

22 Council Regulation No 1257/96, OJ L 163, 2.7.1996

23 Art.5.1(a), Council Decision No. 1313/2013/EU, Official Journal of the European Union, L347, 20.12.2013

24 http://www.unisdr.org/we/coordinate/sendai-framework

25 Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation (SREX), http://ipcc-wg2.gov/SREX/report/

The UCPM is also financing actions related to preventing, preparing for and responding to disasters. These include: an important EU Civil protection training programme, regular large-scale exercises and modules exercises, exchange of experts, prevention and preparedness projects (through annual calls for applications[26]), logistical and transport support for response missions, deployment of coordination, assessment or advisory missions, adaptation and certification of assets to be included in the Voluntary Pool, the availability of buffer capacities under the Voluntary Pool (additional assets than those made available by the Member States). In the area of marine pollution these actions are coordinated with the European Maritime Safety Agency and the regional sea conventions.

3.3 Critical Infrastructure Protection

The **new approach to the European Programme for Critical Infrastructure Protection**[27] (EPCIP) is built on a review of the 2006 programme and the Council Directive 2008/114/EC[28] on the identification and designation of European critical infrastructures and the assessment of the need to improve their protection. It aims to ensure a high degree of protection of EU infrastructures and increase their resilience (against all threats and hazards). It looks at interdependencies between critical infrastructures, industry and state actors, taking account of the cross border dimension and interdependencies between sectors (e.g. European high-voltage electricity grid). The EPCIP established (1) procedures for the identification and designation of European critical infrastructures and assessment of the need to improve their protection (Directive 2008/114/EC); (2) measures to facilitate its implementation, including an action plan, CIWIN, CIP expert groups at EU level and information sharing process; (3) funding for CIP-related measures and projects focussing on 'Prevention, Preparedness and Consequence Management of Terrorism and other Security Related Risks' such as ERNCIP (see 6.9.2); and (4) an external dimension for engagement with third countries on CIP. At the time of publication of the revised approach (2013), less than 20 European Critical Infrastructures had been designated and hence very few Operator Security Plans had been produced; the number of ECI designated has since increased substantially. The Directive 2008/114/EC has mainly encouraged bilateral engagement of Member States instead of a real European forum for cooperation – the sector-focused approach of the directive represents a challenge to a number of MS as in practice the analysis of criticalities is not confined to sectoral boundaries and follows rather a 'system' or 'service' approach (e.g. hospitals, financial services). There is a need for a cross-sectoral approach development. In practical terms, development of preparedness strategies are based around contingency planning, stress tests, awareness raising, training, joint courses, exercises and staff exchange. The programme also promotes the dialogue between the operators of the critical infrastructures and those who rely upon them in order to better prepare responses to events affecting European critical infrastructures. The gaps identified in the review of the EPCIP led the Commission to present its new approach to the implementation of the EPCIP in 2013, with a greater focus on interdependencies and proposing practical work with four critical infrastructures of a European dimension (Eurocontrol, Galileo, the electricity transmission grid and the gas transmission network).

The guidelines for trans-European energy infrastructure[29] are built upon the Communication of 28 February 2011 entitled 'Energy infrastructure priorities for 2020 and beyond – A blueprint for an integrated European energy network'; it stipulates that the Union's energy infrastructure should be upgraded in order to prevent technical failure and to increase its resilience against such failure, natural or man-made disasters, adverse effects of climate change and threats to its security, in particular as regards European Critical Infrastructures and the assessment of the need to improve their protection.

26 http://ec.europa.eu/echo/en/funding-evaluations/financing-civil-protection-europe/selected-projects

27 SWD(2013) 318 final

28 Council Directive 2008/114/EC, OL L345/75

29 Regulation (EU) no 347/2013 of 17 April 2013, OJ L115/39 of 25.04.2013

Creating the environment for safe transport is essential for European citizens. **EU transport policies**[30] cover a wide range of security and safety policies in the air, road, maritime and rail areas which all relate to technical standards for preventing / detection risks and responding to major threats, including terrorist attacks, crimes and accidents. In order to maintain proper security levels cooperation with third countries is paramount and the Commission consolidates and strengthens security by working together with major international partners, exchanging experiences and best practices. Security in transport also relies on new technologies that can really assist in developing smooth high-security systems for the future but without making the security checks too long and intense.

3.4 CBRN and Explosives

From the above, it is clear that Chemical, Biological, Radiological, Nuclear and Explosive (CBRN-E) threats are covered by a range of policies. In views of improving coordination of actions related to CBRN-E risk management, the European Commission has issued strategic documents which main features are described below regarding technical challenges.

3.4.1 CBRN Action Plan

The **CBRN Action Plan** aimed to ensure that unauthorised access to CBRN materials of concern is as difficult as possible. Prevention is based on robust risk-assessment processes, which include the prioritisation, security and control of high-risk CBRN materials and facilities, developing a high-security culture of staff, improving the security of transport, information exchange, import and export regimes, and strengthening cooperation on the security of nuclear materials. Key Actions defined in the Plan are designed to reduce threat and damage from CBRN incidents of accidental, natural and intentional origin, including terrorist threats. It is a political commitment which may be seen as a roadmap of intentions guided by principles of EU solidarity (the responsibility of protecting populations against CBRN incidents lays with the Member States), EU added value (respecting principles of subsidiarity and proportionality), based on existing regulations and instruments, and in close consultation with national authorities. Actions are based on risk- and threat assessments and cost-effective assessments. Confidentiality of certain types of information is taken into account. Actions have been financially supported by expired and existing Union programmes and fund[31,32].

The plan aimed to efficiently respond to incidents involving CBRN materials and recover from them as quickly as possible. Specific attention is made to CBRN emergency planning, strengthening countermeasure capacity, reinforcing information flows, developing better modelling tools and improving criminal investigation capacity. The plan focuses on the required capability to detect CBRN materials in order to prevent or respond to CBRN incidents. This is related to the development of minimum detection standards to be applied across the entire EU, establishing trialling, testing and certification schemes for CBRN detection and improving the exchange of good practices on the detection of CBRN materials. The Plan promotes a scenario-based/modelling approach at EU level to identify work priorities in the detection field (identification of CBRN material and detection technologies), wide risk assessment (including events with cross-border effects) built on existing scenarios and national experience, and gap analysis; it supports the exchange of methods and procedures for developing scenarios and modelling, interconnecting detectors at national levels where feasible including data on incidents, coordination of exercises and lessons learnt. It also promotes a mechanism of information exchange among Member States on methodologies of scenario development related to sampling and detection, taking appropriate confidentiality into account. In the specific area of biological pathogens and toxins, the Plan promotes the development of detection models, considering distribution, possible vectors, infectious dose and stability.

30 http://ec.europa.eu/transport/home_en

31 http://ec.europa.eu/transport/home_en

32 OJ L 58, 24.2.2007, p.1-6 - Prevention, Preparedness and Consequence Management of Terrorism and other Security related risks

The CBRN Action Plan is complemented by the **new EU approach to the detection and mitigation of CBRN-E risks** which adopts a proactive approach to the detection of threats, and proposes among others to put effective, proportional safeguards in place, including prevention, preparedness and response measures at EU level with the objective to better assess the risks, to develop countermeasures, to share knowledge and best practices, test and validate new safeguards with the ultimate goal of adopting new security standards. The response mechanisms within the CBRN Action Plan are linked to various EU policy instruments such as the EU Mechanism for Civil Protection (see section 5.2), the EU Integrated Political Crisis Response Arrangements (IPCR), the implementation of the Solidarity Clause, the ARGUS crisis management system allowing for an immediate exchange of information among Commission rapid alert systems such as the ECURIE system for radiological emergencies, the Early Warning and Response System (EWRS) for communicable diseases, and the RAS-BICHAT for biological and chemical health threat.

3.4.2 Explosive Action Plan and Regulation 98/2013

The enhancement of the security of explosives has been identified as a priority issue for the European Commission in its efforts in the field of combating terrorism. Home-made explosives can be fabricated from certain easily accessible chemical precursors and can be misused by terrorists to inflict casualties and damage. In order to mitigate the risk of such misuse, in 2008 the Justice and Home Affairs Council approved the **EU Action Plan on Enhancing the Security of Explosives**. The Action Plan thus contributes to the implementation of the EU Counter Terrorism Strategy (2005) and is in line with the Internal Security Strategy (2010).

The EU Explosives Action Plan contains 48 measures related to the prevention, detection, and preparedness and response to explosives-related incidents. The recommendations for action address a comprehensive range of relevant aspects, such as precursors, storage, transport, traceability, detection, research, information exchange, and inter-agency coordination.

A first set of horizontal measures aims at improving the exchange of timely information and best practices, and supporting and promoting research, including research into inhibitors to precursors. A second set of measures focuses on prevention around explosives precursors, by raising staff awareness, increasing control over substances and explosives available on the market (including pyrotechnics), and establishing a mechanism for reporting suspicious transactions. Other prevention measures cover the security of explosives facilities and transport, as well as the security vetting of personnel at any stage in the supply chain. The action plan calls, in addition, for increased efforts to reduce the presence of bomb-making information over the internet. A third set of actions focuses on the detection of explosives threats. The plan has as a priority to establish a scenario-based approach to identifying priorities in the detection field, notably to identify detection technology requirements, current equipment that is available, and common minimum detection standards which should be applied. In the area of detection, the action plan recognises that there is an urgent need for improved exchange of information between authorities, researchers, and end-users, particularly in order to establish an EU-wide certification, testing and trialling scheme for the detection of explosives, and to continuously reassess the use of detection technologies in specific locations. Finally, a set of preparedness and response measures call on the creation of a network which improves the exchange of information and best practices among explosives ordnance disposal units in Europe, and also supports the development of threat assessments on explosives and on specific threats.

The actions contained in the EU Explosives Action Plan are implemented through a joint effort of the European Commission, Member States, Europol, research institutions as well as private sector stakeholders. DG HOME aimed at fully achieving implementation by the end of 2015.

One of the key actions of the EU Explosives Action Plan called on the Commission to consider measures to regulate the availability of explosives precursors on the market. As a result of the work done to implement this action, **Regulation (EU) 98/2013 on the marketing and use of explosives precursors** was adopted with

a view to enhancing the protection of citizens from the threat of homemade explosives. Regulation 98/2013 came into force on 2 September 2014. It restricts availability, possession and use, by members of the general public, of seven dangerous substances ('restricted explosives precursors,' listed in Annex I). Member States may decide to grant access by the public to these substances only through a system of licenses and registration. In addition, the Regulation introduces obligations for economic operators who place such substances on the market. Operators must ensure the appropriate labelling of restricted explosives precursors, and must also report any suspicious transactions involving both the seven restricted substances and eight other non-restricted substances which are also considered of concern (listed in Annex II).

3.4.3 International Conventions

At international level, the **EU strategy against Proliferation of Weapons of Mass Destruction** (WMD strategy), together with relevant Community Instruments, in particular the Instrument for Stability (supporting third countries to develop training and assistance on CBRN risk mitigation and preparedness), reinforces actions on reducing the risks from CBRN materials. This is linked to nuclear non-proliferation for strengthening nuclear security[33]. Furthermore, the Implementation of the UN Security Council Resolution 1540 will be further strengthened by supporting the International Atomic Energy Agency (IAEA), in particular contributing to more efficient export control and border monitoring systems. Regional Centres of Excellence will be instrumental in order to exchange best practices, support capacity building and share experiences gathered at EU level with key regions. Issues related to the threat of CBRN materials are also discussed by international organisations such as the Organisation for the Prevention of Chemical Weapons (OPCW), the BTWC Conference, Interpol and the Global Health Security Initiative (GHSI).

3.5 Major accident hazards

Major accidents can have consequences beyond the limits of industrial establishments and the potentially significant human, ecological and economic costs of an accident are borne not only by the establishment affected, but also by the society concerned. It is therefore necessary to establish and apply safety and risk-reduction measures to prevent major accidents, and to minimise their effects if they nevertheless occur, thereby ensuring a high level of protection throughout the Union as well as supporting sustainable economic growth.

The **Directive 2012/18/EU (on major-accidents hazards involving dangerous substances)**[34], better known as Seveso-III-Directive, sets a risk management framework: a) by obliging operators to take all necessary measures to prevent major accidents and to limit their consequences for human health or the environment and b) by requesting competent authorities to establish supporting policies (e.g. emergency or land-use planning). . Different sets of requirements are set depending on the amount of dangerous substances present in the establishment. The Directive excludes military establishments, pipelines, as well as the transportation of dangerous substances outside establishments. Risk assessments should consider operational causes, natural causes (e.g floods, earthquakes) and other external causes of accidents. The latter would, where appropriate, also include malicious acts even if those are not explicitely mentioned. While the Directive does not distinct between causes of accidents (e.g. unintentional or intentional) and is rather impact-oriented, traditionally it is rather a safety measure and implementation focusses on unintentional events. However, there is an increasing awareness in the community towards malicious causes of major accidents and the relevance of Seveso establishments for national security, which requires a cross-sectorial coordination as stipulated in the new CIP approach (see § 5.3). The Directive is complemented by CIP regulations for attack-prone installations.

33 COM(2009) 143 final, 26.03.2009

34 Directive 2012/18/EU of the European Parliament and of the Council of 4 July 2012 on major-accidents hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC, Official Jornal of the EU, No. L 197/1, 24.7.2012.

At international level, the EU is actively engaging in the **Convention on the Transboundary Effects of Industrial Accidents** (TEIA)[35] of UNECE (UN Economic Commission for Europe) which is designed to protect people and the environment against industrial accidents, aiming to prevent accidents from occurring, or reducing their frequency and severity and mitigating their effects if required. The Convention promotes active international cooperation between countries before, during and after an industrial accident. The TEIA has also close links with the Sendai Framework for Action (see section 5.2) and is increasingly aware of cross-links with CBRN-E issues, thus offering an additional cooperation channel. A number of other agencies (e.g. OECD, OPCW) are also active in the area of industrial accidents and cooperate with the EU and UNECE on the issue.

3.6 Serious cross-border threats to health

The protection of human health is a matter which has a cross-cutting dimension and is relevant to numerous Union policies and activities. The Commission should ensure, in liaison with the Member States, the coordination and exchange of information between the mechanisms and structures established under the **Decision 1082/2013/EU on serious cross-border threats to health**[4] as well as activities which are relevant to the preparedness and response planning, monitoring, early warning of, and combating serious cross-border threats to health. Pursuant to Decision 2119/98/EC a network for the epidemiological surveillance and control of communicable diseases in the Community has been set up. Apart from communicable diseases, a number of other sources of danger to health, in particular related to other biological or chemical agents or environmental events, which include hazards related to climate change, could by reason of their scale or severity, endanger the health of citizens in the entire Union, lead to the malfunctioning of critical sectors of society and the economy and jeopardise an individual Member State's capacity to react. The legal framework set up under the above Decision should, therefore, be extended to cover other threats and provide for a coordinated wider approach to health security at Union level. In the context of this Decision, an important role in the coordination of recent crises of Union relevance has been played by an informal group composed of high-level representatives from Member States, referred to as the Health Security Committee, and established on the basis of the Presidency Conclusions of 15 November 2001 on bioterrorism. The Decision promotes preparedness and response planning through consultation among the Member States and the Commission in order to share best practice and experience, as well as interoperability of national preparedness planning and addressing the intersectoral dimension of preparedness and response planning at Union level.

The Health Security Committee plays an important role in responding to health threats (notably in terms of crisis preparation, exercises on CBRN events and the listing of pathogens and chemicals which pose a health threat) whilst the European Centre for Disease and Control (ECDC) provides risk assessments for communicable diseases and biological incidents.

3.7 EU Adaptation Strategy to Climate Change

The **EU Adaptation Strategy to Climate Change** highlights the consequences of climate change and the need for adaptation measures. It focuses on early, planned and coordinated action rather than reactive adaptation. The communication highlights the need for systematic exchanges of best practice on how to best adapt to climate change. The strategy takes account of global climate change impacts such as disruptions to supply chains or impaired access to raw materials, energy and food supplies. The overall aim is to contribute to a more climate resilient Europe by enhancing the preparedness and capacity to respond to the impacts of climate change at local, regional, national and EU levels, developing a coherent approach and improving coordination. This strategy is closely linked to national adaptation strategies which are considered as recommended instruments by the UN Framework Convention on Climate Change. A close coordination between climate change adaptation and disaster risk management / policies is also required. Development is foreseen of guidelines on minimum standards for disaster prevention based on good practices.

35 http://www.unece.org/env/teia.html

The requirement for "climate-proofing" and mainstreaming of adaption measures in various sectors also calls for strengthened preparedness and science-policy links. The strategy makes reference, in particular, to the Marine Framework Directive (Directive 2008/56/EC)[36] and various environmental policies, related to e.g. Forestry (EC Regulation 2152/2003), Water (Directives listed in the COM(2012)673 on the Blueprint to Safeguard Europe's Water Resources[37]), as well as other sectors such as Transport (Decision 661/2010/EC), Energy (COM(2011)665/3), and the above described Disaster Risk Prevention (within the Union Civil Protection mechanism) and Health (Decision 1082/2013).

3.8 Water and Marine policies

Linked to the above, specific policy instruments are in place in the water sector related to extreme hydrometeorological events such as floods and droughts. In the first place, complementing the Water Framework Directive (WFD)[38] (and its daughter Directives, namely the Priority Substances Directive[39] and the Groundwater Directive[40]), flood prevention and management are tackled by the Flood Directive which requires EU Member States to assess and manage flood risks, with the aim of reducing adverse consequences for human health, the environment, cultural heritage and economic activity associated with floods in Europe. This directive has to be coordinated with the implementation of the WFD from the second river basin management plan onward (which will take place from 2015 to 2021). It therefore provides a comprehensive mechanism for assessing and monitoring increased risks of flooding, taking into account the possible impacts of climate change, and for developing appropriate adaptation approaches. Water scarcity and droughts are also considered in the policy context[41]. In particular, a European assessment of water scarcity and droughts has been conducted by the European Commission in the framework of the Water Scarcity and Drought Communication to monitor changes across Europe and to identify where further action is needed in response to climate change. Recommendations have been taken on board in the Blueprint to Safeguard Europe's Water Resources. It may, therefore, be considered that the successive steps of the WFD River Basin Management Planning (RBMP) and the related flood and drought policy framework may conveniently incorporate adaptation to climate-related water risks through risk assessment, monitoring, environmental objective setting, economic analysis and action programmes to achieve well defined environmental objective.

The Drinking Water Directive (DWD)[42] regulates the quality of water intended for human consumption. The Directive is currently under evaluation as a follow-up of the European Citizens' Initiative (ECI) Right2Water[43]. The policy concerns the quality of drinking water from around 100,000 water supplies. It aims to protect human health by ensuring that drinking water at the consumer tap is wholesome and clean. It lays down essential quality standards at EU level, for which monitoring programmes have to be performed. For any failure remedial action has to be taken. Its intervention logic was to address all possible contamination causes, including from treatment and distribution, by setting strict minimum parametric values to be complied with at the consumer tap. It thus implicitely includes deliberate poisoining risks. The abstraction of drinking water and the protection of water bodies for this aim is, however, not regulated in the DWD, but in Article 7 of the above mentioned

36 Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive), OJ L 164/19.

37 COM(2012) 673 final

38 Directive 2000/60/EC

39 Directive 2013/39/EU of the European Parliament and of the Council of 12 August 2013 amending Directives 2000/60/EC and 2008/105/EC as regards priority substances in the field of water policy, OJ L 226/1.

40 Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration, OJ L 372.

41 COM(2007) 414 final

42 Council Directive 98/83/EC of 3 November 1998 on the quality of water intended for human consumption, OJ L 330, 5.12.1998, p. 32

43 Communication from the Commission on the European Citizens' Initiative "Water and sanitation are a human right! Water is a public good, not a commodity!" COM/2014/0177 final

Water Framework Directive (WFD), which requires Member States to identify bodies of water for the abstraction of drinking water and to protect them, so that the resulting water will meet the DWD requirements under the water treatment regime applied.

Finally, while the protection of the (coastal) marine environment is covered by the WFD, EU environmental policymakers considered there was a lack of strategy underpinning the policies to protect the marine environment. A strategy was thus developed in the sixth Environmental Action Programme (2002-2012) which resulted in setting up environmental objectives for the marine environment. The related protection regime is regulated under the EU Marine Strategy which was adopted in 2008[44].

3.9 Control of export and Union Custom Code

The **Council Regulation (EC) no 428/2009 on a Community regime for the control of exports, transfer, brokering and transit of dual-use items**[45] is setting rules that Member States have to apply to control the transfer of certain dual-use items within the Community in order to safeguard public policy or public security. This includes the effectiveness of controls on exports from the Community and those items which only pass through the territory of the Community (i.e. not assigned to a customs-approved treatment or use other than the external transit procedure or placed in a free zone or warehouse with no record of them).

The Union Customs code (UCC) is part of the modernisation of customs and serves as the new framework regulation on the rules and procedures for customs throughout the EU. Its substantive provisions have entered into force on 1 May 2016[46]. With the increase in global threats, EU customs holds a key role in ensuring external border and supply chain security and thus contributing to the security of the European Union. The use of detection technology and control equipment, together with the mandatory data submission (Entry Summary declarations) and the EU risk management system, are important elements of the overall customs control and supervision process.

Detection technologies have long played an important part in customs border controls by assisting in the detection of dutiable, prohibited and controlled goods and materials. However, as the volume of international trade continues to expand and an increasing emphasis is placed on supply chain security and trade facilitation, the role of Customs is evolving. For instance, the use of data analysis has become as important as the use of detection technologies in dealing with existing and emerging threats. **This continuous drive for more efficient and more effective customs processes calls for the integrated application of innovative information and detection technologies**.

Adapting cargo information systems is essential to strentening monitoring and risk based controls of international supply chains in order to ensure that CBRN material are not illicitly entering in to the European Union.

44 EU Marine Strategy Framework Directive, 2008/56/EC

45 OJ L 134/1 of 29.05.2009

46 Regulation (EU) no 952/2013

3.10 Border security

In the framework of the Communication "*Examining the creation of a European Border Surveillance System (EUROSUR)*[47]", support needed in the area of border security targeted the development of technologies and capabilities which are required to enhance systems, equipment, tools, processes, and methods for rapid identification to improve border security, whilst respecting human rights and privacy. This includes both control and surveillance issues, contributing to the further development of the EUROSUR and promoting an enhanced use of new technology for border checks; also in relation to the Smart Borders legislative initiative (for both EUROSUR and the Smart Borders, the Commission published the initial relevant communications on 13 February 2008).

At sea, the main technical challenge was identified in the detection and identification of small non cooperative vessels (and of their anomalous behaviour). At the system level the identified priority was to improve the sharing of information amongst actors active in maritime surveillance. A close interactive dialogue has taken place with other Commission DGs (DG HOME, DG MARE, DG JRC, DG MOVE) as well as with EU agencies (Frontex, EMSA and EDA). This helps the setting by the Frontex Agency of CONOPS (concepts of operations) as related to the detection small boats detection.

3.11 Fight against crime and terrorism

Regarding the fight against crime and terrorism, the European Commission is not in charge of operational activities but supports and facilitates the activities of the security practitioners at the EU level.

The main policy framework for this action is provided by the **European Agenda on Security (COM(2015) 185 final)** adopted on 28th April 2015, which provides strategic focus for the EU and Member States for the overall goal of strengthening the Union's security framework. The three pillars of the Union's action to obtain this goal are: to strengthen the information exchange; to increase the operational cooperation; and to provide support in training, funding, research and innovation. The main thematic priorities listed in the Agenda are: terrorism, organised crime and cybercrime.

A **Communication on the delivery of the Agenda on Security (COM(2016) 230 final)** has been adopted in April 2016. It acknowledges the common position of the European Parliament, the EU Ministers for Justice and Home Affairs and the Commission to press ahead with the measures foreseen and to deepen the fight against terrorism. For this reason, the Communication, one year on from the presentation of the Agenda, takes stock of the progress that has been made in its implementation as concerns the EU contribution to counter-terrorism.

47 COM(2008) 68 final

In addition to the Agenda, a number of more specific EU legislative and policy documents apply in the area of fight against crime and terrorism. Two of the most relevant ones are the **Regulation (EU) No 98/2013** of the European Parliament and of the Council of 15 January 2013 on the marketing and use of explosives precursors, and the **Communication COM(2016) 379 final** on supporting the prevention of radicalisation leading to violent extremism.

Also, on 13 and 14 December 2011, the Council approved conclusions (17537/11 ENFOPOL 413 COPEN 342) on the vision for European Forensic Science 2020 including the creation of a European Forensic Science Area and the development of forensic science infrastructure in Europe. Their aim was to foster cooperation between police and judicial authorities across the European. An action plan has been developed under the Dutch presidency which should be adopted as Council conclusions in June 2016.

Furthermore, the Commission assists EU Member States in the implementation of existing legal instruments such as e.g. the Data Retention Directive, the Decision on access for consultation of the Visa Information System etc.[1]. The EC also participates in specialised working groups of the Council such as COSI, and agencies such as Europol and CEPOL.

Finally support to security practitioners is also granted via the financing of national and multi-national projects that enhance police cooperation, including among police networks.

4. EU-FUNDING INSTRUMENTS – RESEARCH AND CAPACITY-BUILDING

4.1 Introduction

As highlighted in section 4.1, EU research funding is orchestrated by different "research families", namely various programmes of DG RTD, DG CNECT and DG HOME, as well as research actions undertaken by the Joint Research Centre (JRC). Other funding instruments focus on capacity-building and training (e.g. prevention, preparedness and response projects in disaster risk management funded by DG ECHO, security-related projects funded by DG HOME) but they will not be developed in this document. Linked to EU research actions, the European Defense Agency (EDA) funds research projects with interactions with DG HOME funded projects under the so-called European Framework Cooperation (EFC).

While research programming and policy responsibilities lay with the respective General-Directorates of the European Commission, the management of projects is increasingly delegated to "sister" agencies, namely the Research Executive Agency (REA) and the Executive Agency for SMEs (EASME).

4.2 Horizon 2020

Horizon 2020 is the biggest EU Research and Innovation programme ever with nearly €80 billion of funding available over 7 years (2014 to 2020) – in addition to the private investment that this money will attract. It promises more breakthroughs, discoveries and world-firsts by taking great ideas from the lab to the market. Horizon 2020 is the financial instrument implementing the Innovation Union, a Europe 2020 flagship initiative aimed at securing Europe's global competitiveness. By coupling research and innovation, Horizon 2020 is helping to achieve this with its emphasis on excellent science, industrial leadership and tackling societal challenges. The goal is to ensure Europe produces world-class science, removes barriers to innovation and makes it easier for the public and private sectors to work together in delivering innovation. In the Security area, Horizon 2020 will contribute to the implementation of the policy goals of the Europe 2020 strategy, the Security Industrial Policy, the Internal Security Strategy, the Cyber Security Strategy[48], the Union Civil Protection Mechanism, as well as supporting the various above-mentioned thematic policies. The primary aim of the Work Programme on "Secure societies – Protecting freedom and security of Europe and its citizens" is to enhance the awareness, preparedness and resilience of our society against natural and man-made disasters. Crisis Management (including CBRN-E, natural and man-made disaster risk management) related research will be considered in various topics focusing on new crisis management tools, novel solutions for the protection of critical infrastructure, and new forensic tools for fighting crime and terrorism.

48 COM (2013) 48 final

The current EU Framework Programme for Research and Innovation is built up upon achievements of the 7th Framework Programme, which mapping is focused upon and which embedded serveral programmes of direct or indirect relevance to secure, safe and resilient societies, namely:

- Health, demographic change and wellbeing;
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy;
- Secure, clean and efficient energy;
- Smart, green and integrated transport;
- Climate action, environment, resource efficiency and raw materials;
- Europe in a changing world - inclusive, innovative and reflective societies;
- Secure societies - protecting freedom and security of Europe and its citizens.

4.3 DG ECHO

The overall rationale of the DG ECHO's Programme for Capacity Building is that such investments into the global humanitarian system lead to more rapid and more cost-effective humanitarian responses, allowing a better and broader humanitarian coverage. EU Member States and the European Commission's partners agreed that: "supporting the development of the collective global capacity to respond to humanitarian crises is one of the fundamental tenants of our [EU] approach"[49]. The principal objective of the programme is to strengthen the global humanitarian preparedness and response capacity. Specific objectives are:

- To increase the effectiveness and reinforce the capacity of international humanitarian organisations and stakeholders to assess, analyse, prepare and respond to humanitarian needs during man-made and /or natural disasters and their immediate aftermath in a coordinated and inclusive manner.
- To reinforce the capacity of international humanitarian organisations and stakeholders to deliver more varied and appropriate forms of food assistance, during emergencies and their immediate aftermath.

4.4 DG HOME / ISF

The goal of the Internal Security Fund, managed by DG HOME, is to contribute to ensuring a high level of security in the EU. One of two general objectives is enhancing the capacity of EU States and the Union for managing effectively security-related risk and crisis, and preparing for protecting people and critical infrastructure against terrorist attacks and other security related incidents. In this context the Fund co-finances projects in the areas of CBRN-E, critical infrastructure protection as well as crisis management. The projects are supposed to be much more operational than those funded under the Horizon 2020. The majority of the funds are implemented via the shared management, nevertheless the Commission directly manages – as union actions – around 1/3 of the total budget (which for the 2014-20 period, slightly over EUR 1 billion). These funds will have to cover however all security-related priorities, i.e. apart from above-mentioned areas, also fight against organized crime and police cooperation mechanisms.

49 As adopted by the Council, EP and Commission on 18 December, (OJ 2008/C/ 25/01 of 30.01.2008).

4.5 DG DEVCO - CoE

As a matter of new international priority, the European Union decided in 2010 to launch and fund a new concept called "CBRN Risk Mitigation Centers of Excellence (CoE)", based on a voluntary, cross border, local ownership and, last but not least, bottom up approach. As of today, 52 partner countries joined the initiative, coordinated around 8 regional secretariats based Georgia, Jordan, Algeria, Morocco, Kenya, United Arab Emirates, Uzbekistan and The Philippines launched its chemical, biological, radiological and nuclear (CBRN) Centres of Excellence (CoE) initiative (hereinafter the initiative) in May 2010. The initiative is designed to strengthen the institutional capacity of non-EU countries to mitigate CBRN risks which, if not countered, may constitute a threat to the EU. The origin of these risks can be criminal (proliferation, theft, sabotage and illicit trafficking), accidental (industrial catastrophes, in particular chemical or nuclear, waste treatment and transport) or natural (pandemics but also consequence of natural hazards on CBRN material and facilities).

With a budget of 250 million euro for the 2010–2020 period, the initiative is the single biggest measure of the long-term component of the Instrument contributing to Stability and Peace (IcSP). The IcSP was designed to provide the European Union with a new strategic tool to address a number of global security and development challenges. The IcSP provides non-EU partner countries with technical and financial assistance for risk mitigation and preparedness relating to chemical, biological, radiological and nuclear material or agents. According to the European Parliament and the Council, the measures adopted through the IcSP should be complementary and consistent with measures adopted in pursuit of the EU's common foreign and security policy.

The main objectives of the EU CBRN Centres of Excellence initiative are to strengthen the long-term national and regional CBRN governance and capabilities of responsible authorities and administrative infrastructure. The CoE initiative is a provider of **tools and means for increased CBRN governance**. It facilitates CBRN governmental officials from partner countries, belonging to all relevant ministries and agencies involved in CBRN governance, to meet regularly at the national level but also twice a year at the regional level between CBRN (round tables). This cross agency cooperation is key to stimulate further networking and has been much appreciated by partner countries. It **funding for CBRN activities identified and agreed by partner countries** during these regional round tables meetings. By implementing these activities, Member States come together and work to create action and provide CBRN governance support. More than fifty CoE projects have been funded in the last 5 years. These activities include a wide variety of formats, such as workshops and trainings, train the trainers programmes, capacity building or even equipment. Interagency cooperation, team building and support for CBRN administrative reforms are also part of these activities. Furthermore, the CoE provides a funding platform and a **sound methodology to first assess CRBN gaps needs at the national levels** (NAQs with hundreds of supporting questions) which is activated only upon request from a partner country, and, secondly, **a methodology to develop CBRN National Action Plans based on the needs assessments**. Results are fully confidential and belong entirely to the country.In the last two years, more than 25 partner countries completed their CBRN needs assessments and more than 15 started to develop their own National Action Plans. Some of the first NAPs developed within the initiative will be presented shortly this afternoon by their CoE country representatives.

The European External Action Service (EEAS), the body responsible for the EU foreign policy, is responsible for the strategic orientation of the initiative. DG DEVCO — International Cooperation and Development — is the decision-making body and is responsible for implementing the initiative's budget. It prepares the annual action programmes of the IcSP and monitors the work of the main implementing bodies: the Commission's Joint Research Centre (JRC) and the UN Interregional Crime and Justice Research Institute (UNICRI).

Further detailed info: http://www.cbrn-coe.eu/

4.6 LIFE+

The LIFE (the Financial Instrument for the Environment) Regulation, which was published on 20 December 2013, sets a budget for the next funding period, 2014–2020, of €3.4 billion in current prices. The LIFE programme is the EU's funding instrument for the environment and climate action. The general objective of LIFE is to contribute to the implementation, updating and development of EU environmental and climate policy and legislation by co-financing projects with European added value. The European Commission (DG Environment and DG Climate Action) manages the LIFE programme. The Commission has delegated the implementation of many components of the LIFE programme to the Executive Agency for Small and Medium-sized Enterprises (EASME). External selection, monitoring and communication teams provide assistance to the Commission and EASME. The European Investment Bank will manage the two new financial instruments (NCFF and PF4EE). The LIFE programme will contribute to sustainable development and to the achievement of the objectives and targets of the Europe 2020 Strategy, the 7th Union Environmental Action Programme and other relevant EU environment and climate strategies and plans.

4.7 Structural funds

Solutions exist that can help our regions become the best that they can be. Today, the EU's emphasis is very much on paving the way for regions to realise their full potential – by helping them to capitalise on their innate strengths while tapping into opportunities that offer possibilities for economic, social and environmental progress. Interreg Europe helps regional and local governments across Europe to develop and deliver better policy. By creating an environment and opportunities for sharing solutions, the programme aims to ensure that government investment, innovation and implementation efforts all lead to integrated and sustainable impact for people and place. By building on its forerunner, INTERREG IVC (2007-2013), Interreg Europe aims to get maximum return from the EUR 359 million financed by the European Regional Development Fund (ERDF) for 2014-2020. To achieve this goal, Interreg Europe offers opportunities for regional and local public authorities across Europe to share ideas and experience on public policy in practice, therefore improving strategies for their citizens and communities.

4.8 Education / Training

Erasmus+ is the EU's programme to support education, training, youth and sport in Europe. Its budget of €14.7 billion will provide opportunities for over 4 million Europeans to study, train gain experience, and volunteers abroad. Set to last until 2020, Erasmus+ does not just have opportunities for students. Merging seven prior programmes, it has opportunities for a wide variety of individuals and organisations. Erasmus+ has opportunities for people of all ages, helping them develop and share knowledge and experience at institutions and organisations in different countries. Erasmus+ has opportunities for a wide range of organisations, including universities, education and training providers, think-tanks, research organisations, and private businesses. The aim of Erasmus+ is to contribute to the Europe 2020 Strategy for growth, jobs, social equity and inclusion, as well as the aims of ET2020, the EU's strategic framework for education and training.

4.9 JRC

4.9.1 JRC's CBRNE activities

The extensive ongoing work in CBRNE in the European Commission's Joint Research Centre is bringing together JRC's competences in chemical, biological, radiological, nuclear and explosive risks to respond to the needs of policy DGs in successfully addressing CBRNE as an emerging issue in the EU and in global security. In this context, the JRC collaborates with DG HOME for actions inside the EU in the implementation of the EU CBRN and Explosives action plans, and in aviation security; with DG DEVCO to support the mirroring of activities with partner countries of the EU, acknowledging that security issues are not limited by borders; and with several other partner DGs to fulfil their technical and scientific needs in the CBRNE areas. Security and non-proliferation issues remain an important pillar of the JRC's Euratom activities, extending our support to international safeguards, combating illicit trafficking of nuclear and radioactive materials, enhancing nuclear forensics, export control, and supporting several activities of training (in nuclear safeguards and nuclear and radiological security), as well as research agreements with several institutions in the EU MS. International cooperation with key partners (US, IAEA) in activities such as the Border Monitoring Working Group is also very important in this regard. Finally, standardisation in security is a key issue for the EU market, and the JRC actively supports the development of standards by providing scientific inputs to the European and International technical committees.

The activities in CBRNE security are strongly synergic and are aggregated in JRC's CBRNE cluster, currently including 34 projects focused on several key areas: support to the implementation and monitoring of EU CBRN security policy and international cooperation, support to CBRNE standardisation, improving CBRNE detection, optimising the prevention and detection approach to the emergence of new psychoactive drugs, implementing capacity building and training in nuclear security, supporting export control of dual use items, enhancing critical infrastructure protection and developing nuclear forensics.

Some examples of JRC's activities in CBRNE security include:

- The establishment and running of EUSECTRA - European nuclear security training centre, located in the JRC premises in Karlsruhe and Ispra, inaugurated in April 2013. EUSECTRA offers hands-on training using a wide variety of radioactive and nuclear materials and a broad selection of equipment and measurement instruments. So far, EUSECTRA has conducted trainings for several partners, among them DG TAXUD (Front Line Officers Training Course on Radiation Detection Techniques; customs experts from all the EU Member States will be trained over in total five sessions between June 2015 and February 2016), DG HOME (training for law enforcement officers being planned) and DG ENER but also external customers such as the US' Second Line of Defence programme. It remains at the disposal of MS needs.
- The JRC leads the ITRAP+10 Phase II project, which aims at testing various families of the RN detection equipment produced in the European Union. Manufacturers of instruments used against illicit trafficking of radioactive sources and nuclear material have been invited to participate in an extensive test programme, based on available IEC and ANSI standards, and IAEA recommendations. The important results of the project have been the basis for the input given to International Standardisation Organisations to review and improve the standards. Also, a certification scheme is being set up to capacitate MS laboratories to perform the same verifications.

- The CBRN Centres of Excellence initiative (see section 6.5), launched in 2010 by the European Union, provides a platform for voluntary regional cooperation on all CBRN-related hazard issues, be it of criminal (trafficking, terrorism), natural (pandemics, volcanic eruptions) or accidental (e.g. Fukushima) origin. It also includes the JRC support to the EU outreach activities in export control for dual-use items. The initiative is managed by DG DEVCO and the EEAS, with the technical and scientific support of a task force from the JRC and the collaboration of the United Nations' UNICRI institute. The JRC supports countries participating in the initiative to work together to identify risks, assess gaps and needs, draft National Action Plans and design capacity building projects to be implemented in the partner regions by EU MS consortiums. Fifty-two countries are now partners of the initiative, and a further 25 are looking to join.
- The JRC - Institute for reference materials and measurements (IRMM) supports the development of advanced measurement standards and training in several fields including safety and security linked to CBRN-E threats. For example the institute provides nuclear reference measurements and conformity assessment tools to safeguards authorities, industry and the international community helping to stop illicit trafficking of nuclear and radiological materials. JRC-IRMM reviews and tests the performance of new and existing chemical, biological and explosives threat detection equipment for current and emerging substances of interest, and develops testing protocols for first responder (hand-held) equipment. Scientific studies are performed on request for DG HOME and the Standing Committee for Precursors. JRC-IRMM will also produce explosives simulants as quality control tools to i) check that regulatory requirements for explosives detection equipment are met and ii) to support the end users in the Member States. JRC-IRMM provides impartial analysis and technical support to the continuous development and implementation of EU aviation security policies. JRC-IRMM supports the implementation EU requirements for explosives trace detection (ETD), by i) assisting the Commission's own team of aviation security inspectors, ii) providing reference materials to EU test centres who carry out testing of ETD equipment, and iii) developing training tools for personnel involved in operating ETD equipment at security checkpoints. JRC-IRMM supports a new Commission Regulation aiming at harmonising the certification of aviation security equipment, by providing impartial technical analysis of the conformity assessment practices.

4.9.2 ERNCIP

The Joint Research Centre set up the European Reference Network for Critical Infrastructure Protection (ERNCIP) project in 2009 (https://erncip-project.jrc.ec.europa.eu/). This took place under the mandate of the DG HOME, in the context of the European Programme for Critical Infrastructure Protection (EPCIP), and with the agreement of Member States. ERNCIP is a European effort with the mission to “foster the emergence of innovative, qualified, efficient and competitive security solutions, through networking of European experimental capabilities”, with three strategic goals to:

- Improve the protection of critical infrastructure in the EU
- Support the development of the EU’s single market for security
- Identify gaps in EU security product testing capabilities.

To achieve these goals, ERNCIP maintains an online inventory of experimental capabilities in Europe (“The ERNCIP Inventory”) and has developed a network of experts to identify and promote good test practices to form the basis of common European testing standards, aiming at harmonisation of test methodologies and test protocols, where practical. Currently, ERNCIP brings together over 200 active volunteers in this network.

The ERNCIP Inventory (https://erncip-project.jrc.ec.europa.eu/inventory) is a free-to-use search tool for information on European security experimental and testing facilities. It helps all types of critical infrastructure stakeholders to identify and make contact with CIP-related experimental expertise located in the EU. For the laboratories that are registered in the ERNCIP Inventory it provides greater visibility and increased business potential.

Member States and the Commission jointly define the Thematic Areas (TA) of concern, for ERNCIP to address at the EU level. When the need for a TA is identified, ERNCIP forms a Thematic Group (TG) to address this concern. A TG consists of nominated experts from research facilities, and also other stakeholders such as manufacturers and vendors of security solutions, government authorities, academia, and operators of critical infrastructures. Each group is led by an appointed Coordinator, who is responsible for the work programme for the TG to deliver against, in order to achieve the objectives agreed with ERNCIP.

4.9.3 Disaster Risk Management Knowledge Centre (DRMKC)

The Knowledge Centre for Disaster Risk Management is an initiative of the European Commission to further enhance and exploit the knowledge and evidence base of the Commission and the EU member states in disaster risk management. The Knowledge Centre adopts a networked approach to the science/knowledge-policy interface in Disaster Risk Management to support translating complex scientific data and analyses into usable information and provide science-based advice for DRM policies, as well as timely and reliable scientific-based analyses for emergency preparedness and response coordinated activities.

The Knowledge Centre could become a focal point of reference to support the work of Member States, relevant Commission services and the wider DRM community within and beyond the EU. For example, through taking up the results of other projects such as FP7 DRIVER, the Knowledge Centre can advise and inform Member States and others on DRM tools and cooperate with other initiatives (Community of Users). In addition, via the international dimension of the Knowledge Centre, the EU could support the Sendai framework for Disaster Risk Reduction to promote a more systematic and reinforced science-policy interface to strengthen the contribution of DRM to smart, sustainable and inclusive growth globally.

4.10 Joint Investment Programme - EDA

The European Commission (EC) and the European Defence Agency (EDA) aim at maximising the complementarity and synergy of civilian security and defence-related research activities. This synchronisation of Research & Technology (R&T) investment takes place in the context of the European Framework Cooperation (EFC). In September 2011 the EFC cooperation agreement was signed on the CBRN protection by high representatives of EDA and the EC. The EDA contribution takes the form of a Joint Investment Programme (JIP-CBRN), with a centrally managed budget funded by all contributing Members (cM). The cooperation encompasses research activities identified under the security research theme of the Union's seventh research framework programme (FP7 SEC) and the EDA JIP CBRN. The JIP CBRN is a so called EDA R&T CAT A programme managed by a Management Committee comprising one representative from each cM. This committee is chaired by EDA and also comprises a non-voting representative from the Commission. The Management Committee is in charge of the management of the programme, the technological content and the selection of the proposals. Furthermore, they will follow the projects and do the dissemination of the results. As the JIP CBRN is an R&T Cat A programme, all the outcomes are research results (technology demonstration may be included) to be used by all the contributing Members.

Contributing Members of JIP CBRN are Austria, Belgium, Czech Republic, Germany, Spain, France, Ireland, Italy, Netherlands, Poland, Portugal, Sweden and Norway. The budget allocated to the JIP CBRN programme is 12 Million Euro. CBRN Protection is an important dual use domain in which Member States are prepared to jointly invest at a European level. In view of existing and emerging CBRN threats mid- to long-term, Member States see a need for enhanced technological development to protect against these threats. Examples of research funded by the JIP CBRN are described in this report.

1. Disaster risk and crisis management

Most of the research projects listed in this section directly or indirectly support the UCPM (see section 3.2) which address all aspects of the DRM cycle by strengthening cooperation and facilitating coordination within Europe in the areas of disaster prevention, preparedness and response. The mechanism indeed includes an action to 'improve the knowledge base on disaster risks and facilitate the sharing of knowledge, best practices and information'[50]. The use of various Union funds that may support sustainable disaster prevention is promoted and EU Member States and regions are encouraged to exploit those funding opportunities.

1.1 Multi-hazards

Series of projects are of generic nature and address tools and technologies related to DRM (from prevention to recovery) that can be applied to all types of (natural) disasters. The inter-operability of tools/technologies is actually mentioned in the CBRN Action Plan and UCPM as a mean to improve planning of disaster response operations, scenario building and response capacities (of direct support to the ERCC mission). The UCPM also promotes consistency in the response of disasters (networking), and the support to coordination of operational organisations (UN Office for the Coordination of Humanitarian Affairs (OCHA) and Member States).

The following section provides a snapshot of H2020 projects categorised according to specific sectors / themes related to natural hazards.

50 Art.5.1(a), Council Decision No. 1313/2013/EU, Official Journal of the European Union, L347, 20.12.2013

1.1.1 Multi-risk assessment, including cascading effects

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Multi-risk assessment, including cascading effects	BEYOND MATRIX RASOR

In the H2020 framework, the following project has been funded and falls into the multi-risk assessment category (with a link to the category 'Cost assessments of hazards').

SMALLDIS	
Title	The impact of small-scale disaster events: an exploration of disaster related losses, extensive risk management and learning at the institutional and community level in Italy (SMALLDIS) ***This project also corresponds to the category 'Cost assesments of hazards'.***
Contract details	Excellent Science Call: H2020-MSCA-IF-2015 Topic code: MSCA-IF-2015-EF September 2016 / September 2018 - EUR: 180.277,20 REA - 707683
Abstract	The objectives of this project include 1) a conceptual assessment of mechanisms for capturing data on disaster losses to analyze how definitions impact data accuracy for measuring extensive risk; 2) using alternative sources to build on existing datasets to assess the economic, social, and environmental losses associated with extensive disasters for three regions in Italy; 3) examining how disaster management institutions and communities respond to small scale and recurrent disasters, and if such events trigger changes in risk perception, disaster management, and learning at both institutional and community levels; 4) comparisons between quantitative and qualitative impacts of disaster events, and institutional regimes, hazard contexts, and cultural norms for confronting risk.
Website	https://www.cmcc.it/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Fondazione Centro Euro-Mediterraneo Sui Cambiamenti Climatici (IT)

1.1.2 Multi-hazard risk reduction, preparedness, resilience enhancement

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	Project Acronyms
Multi-hazard risk reduction, preparedness, resilience enhancement	CAPHAZ-NET CATALYST CRISMA EMBRACE ENHANCE IncREO TACTIC

These projects were complemented in the H2020 framework by the following projects funded by the Secure Societies programme:

CARISMAND	
Title	Culture And RISkmanagement in Man-made And Natural Disasters (CARISMAND)
Contract details	H2020 Secure Societies Call: H2020-DRS-2014 Topic code: DRS-21-2014 October 2015 / September 2018 - EUR 3,788,526. 25 REA - 653748
Abstract	CARISMAND is approaching the links, and gaps, between disaster management, culture and risk perception from the broadest possible multi-disciplinary perspective and, simultaneously, developing a feedback-loop between disaster management stakeholders and citizens to establish, test, and refine proposed solutions for culturally-informed best practices in disaster management. Systematically, CARISMAND will use an approach that examines natural, man-made and technical disasters, placing at the centre of attention specific aspects that affect culturally informed risk perceptions. Results are discussed through a wide cross-sectional knowledge transfer between disaster managers from different locations and cultural backgrounds in six Citizen Summits and three Stakeholder Assemblies.
Website	http://www.carismand.eu/ https://www.cmcc.it/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Rijksuniversiteit Groningen (NL) Consortium: 2. Academia Nationala de Informatii Mihai Viteazul (RO) 3. Ayuntamiento de Valencia (ES) 4. Comune di Firenze (IT) 5. Consiglio Nazionale delle Ricerche (IT) 6. Euro-Mediterranean Seismological Centre (FR) 7. Fondatsiya Libre (BG) 8. Fundatia Pentru Smurd (RO) 9. Gottfried Wilhelm Leibniz Universitaet Hannover (DE) 10. Laboratorio di Scienze della Cittadinanza (IT) 11. Law and Internet Foundation (BG) 12. Ministério da Justiça (PT) 13. Nutcracker Research Limited (UK) 14. Provincie Groningen (NL) 15. Serviciul de Telecomunicatii Speciale (RO) 16. Police and Crime Commissioner for South Yorkshire (UK) 17. Universita degli Studi di Firenze (IT) 18. Universita ta Malta (MT) 19. Univerzitet u Novom Sadu (RS)

I-REACT	
Title	Improving Resilience to Emergencies through Advanced Cyber Technologies (I-REACT)
Contract details	H2020 Secure Societies Call: H2020-DRS-2015 Topic code: DRS-01-2015 June 2016 / June 2019 - EUR: 5,393,866.75 REA - 700256
Abstract	I-REACT aims to provide increased resilience to natural disasters though better analysis and anticipation, effective and fast emergency response, increased awareness and citizen engagement. I-REACT integrates existing services, both local and European, into a platform that supports the entire emergency management cycle. Innovative cyber technologies and ICT systems are leveraged to enable early planning of disaster risk reduction actions, achieve effective preparedness thanks to risk assessment and early warnings, and efficiently manage emergency responses by empowering first-responders with up-to-date situational information and by engaging citizens through crowdsourcing approaches and social media analysis.
Website	http://www.i-react.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Istituto Superiore Mario Boella Sulle Technolgie Dell'Informatzione e Delle Telecomunicazioni Associazione (IT) Consortium: 2. Alpha Consultants Ltd (UK) 3. Ansur Technologies AS (NO) 4. Answaretech Sl (ES) 5. Aquobex Ltd (UK) 6. Bitgear Wireless Design Services Doo Celi Srl (RS) 7. Consorzio per il Sistema Informativo (CSI Piemonte) (IT) 8. Eoxplore UG (Haftungsbeschrankt) GMBH (IT) 9. Fondazione Bruno Kessler (DE) 10. Geoville Informationssysteme und Datenverarbeitung MBH (AT) 11. Ilatieteen Laitos (Fi) 12. Joinpad Srl (IT) 13. JRC – Joint Research Centre – European Commission (BE) 14. Meteosim SL (ES) 15. Politecnico di Torino (IT) 16. Scienseed Sl (ES) 17. Technische Universitaet Wie (AT) 18. Terranea UG (Haftungsbeschrankt) GMBH (DE) 19. United Nations Educationa, Scientific and Cultural Organization – UNESCO (FR)

1.1.3 Multi-hazards situation awareness / early warning

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Multi-hazards situation awareness / early warning	A4A AIRBEAM COPE INACHUS MOSAIC OPTI-ALERT PHAROS

In Horizon2020, no dedicated research projects or studies have been carried out in the area of multi-hazards situation awareness and early warning.

1.1.4 Multi-hazard emergency response and crisis management, including cascading effects

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Multi-hazard emergency response and crisis management, including cascading effects	ACRIMAS BRIDGE CASCEFF COBACORE DISASTER DRIVER EMILI EVACUATE FORTRESS HIT-GATE IDIRA PREDICT SAFER SICMA SNOWBALL S(P)EEDKITS

These projects were complemented in the H2020 framework by the following projects:

MAGIC	
Title	Moving Towards Adaptive Governance in Complexity: Informing Nexus Security (MAGIC)
Contract details	Climate Action, Environment, Resource Efficiency and Raw Materials Call: H2020-WATER-015-two-stage Topic code: WATER-2b-2015 June 2016 / June 2020 - EUR: 7.457.761,25 EASME - 689669
Abstract	The objective of this project is to open the path towards a new way of managing the Nexus in which researchers and decision makers work together in the search for development strategies while maintaining a leading and informed participation in international discussions about global issues, like climate change or food security. Climate, water, land energy, and food modeling are integrated into a socio- and bio-economics framework using an iterative and participatory method. The impacts are twofold: 1) MAGIC contributes a methodological framework where the needs for advice of different DG in the design of development strategies for the EU are covered using a method that can embrace the complexity of the nexus, for a better understanding of the interactions it holds. 2) the project provides 'on the flight' advice to the EC about the timeliness and soundness for the EU 2020 Strategy and the EU position in international agreements of EU policies -like the Water Framework Directive, the Common Agricultural Policy, or the Low-Carbon Economy Strategy- and targets of implementing technologies -such as fracking, desalination, biofuels and GMOs.
Website	http://magic-nexus.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Universitat Autonoma De Barcelona (ES) Consortium: 2. Climate Analytics Gmbh (DE) 3. Instituto Tecnologico De Canarias, S.A. (ES) 4. Jrc -Joint Research Centre- European Commission (BE) 5. The James Hutton Institute (UK) 6. Universita Degli Studi Di Napoli Federico Ii. (IT) 7. Universiteit Twente (NL) 8. Universitetet I Bergen (NO) 9. Wageningen University (NL)

Reaching out	
Title	demonstRation of EU effective lArge sCale tHreat and crIsis maNaGement OUTside the EU (Reaching out)
Contract details	H2020 Secure Societies Call: H2020-DRS-2015 Topic code: DRS-03-2015 October 2016 / December 2019 - EUR: 18,811,558.38 REA - 700151
Abstract	Reaching Out proposes an innovative multi-disciplinary approach that will optimize the efforts, address a wide spectrum of users and maximize market innovation success. The project has five main objectives: (1) develop a Collaborative Framework, with distributed platforms of functional services; (2) implement a flexible and open "collaborative innovation" process involving users and SMEs, suppliers, operators and research organisations; (3) develop, upgrade and integrate 78 new connectable and interoperable tools; (4) conduct 5 large scale demonstrations on the field; (5) provide recommendations and evaluations for future legal and policy innovations. The main expected impact is to improve external disaster and crisis management efficiency and cost-benefit and increase the EU visibility whilst enhancing EU industry competitiveness and enlarging the market.
Website	https://reout.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Airbus Defence and Space SAS (FR) Consortium: 2. Arbeiter-Samariter-Bund Deutschland EV (DE) 3. Astri Polska Spolka z Ograniczona Odpowiedzialnoscia (PL) 4. Atrisc (FR) 5. Austria insitut fur Europa- und Sicherheitspolitik (AIES) (AT) 6. Ayuntamiento de Madrid (ES) 7. BAE Systems (operations) Ltd (UK) 8. Department of Health (UK) 9. Ecole Normale Superieure de Lyon (FR) 10. Eureka Comunicazione Telematica Srl (IT) 11. European Union Satellite Centre (ES) 12. Federation Internationale des Societes de la Croix-Rouge et du Croissant Rouge – Shelter Research Unit ASBL (LU) 13. Intsitut de Radioprotection et de Surete Nucleaire (FR) 14. Isitituto Affari Internazionali (IT) 15. LDI Innovation OU (EE) 16. Leonaro – Societa per Azioni (IT) 17. Magen David Adom in Israel (IL) 18. Ministere de l'Interieur (FR) 19. Rinicom Limited (UK) 20. Service Departemental D'Incendie et de Secours de la Haute-Corse (FR) 21. Stockholms Universitet (SE) 22. Teknologian tutkimuskeskus VTT Oy (FI) 23. Univ. Cattolica del Sacro Cuore (IT) 24. Univ. Degli Studi di Napoli Federico II (IT) 25. Univ. Catholique du Louvain (BE) 26. Univ. de Nice Sophia Antipolis (FR) 27. Univ. I Agder (NO)

CENTAURO	
Title	Robust Mobility and Dexterous Manipulation in Disaster Response by Fullbody Telepresence in a Centaur-like Robot (CENTAURO)
Contract details	Leadership in enabling and industrial technologies Call: H2020-ICT-2014-1 Topic code: ICT-23-2014 April 2015 / October 2018 - EUR: 4.124.915,00 CNECT - 644839
Abstract	The CENTAURO project aims at development of a human-robot symbiotic system where a human operator is telepresent with its whole body in a Centaur-like robot, which is capable of robust locomotion and dexterous manipulation in the rough terrain and austere conditions characteristic of disasters. The Centauro system will be capable of using unmodified human tools for solving complex bimanual manipulation tasks, such as connecting a hose or opening a valve, in order to relieve the situation. A human operator will control the robot intuitively using a full-body telepresence suit that provides visual, auditory, and upper-body haptic feedback. Rich sensors will provide the necessary situation awareness.
Website	https://www.centauro-project.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Rheinische Friedrich-Wilhelms-Universitat Bonn (DE) Consortium: 2. Fondazione Istituto Italiano Di Tecnologia (IT) 3. Kerntechnische Hilfsdienst GMBH (DE) 4. Kungliga Tekniska Hoegskolan (SE) 5. Linkopings Universitet (SE) 6. Progenox Gmbh (DE) 7. Rheinisch-Westfaelische Technische Hochschule Aachen (DE) 8. Scuola Superiore Di Studi Universitari E Di Perfezionamento Sant'anna (IT)

SmokeBot	
Title	Mobile Robots with Novel Environmental Sensors for Inspection of Disaster Sites with Low Visibility (SmokeBot)
Contract details	Leadership in enabling and industrial technologies Call: H2020-ICT-2014-1 Topic code: ICT-23-2014 January 2015 / July 2018 - EUR: 3.817.417,50 CNECT - 645101
Abstract	SmokeBot addresses shortcomings of existing sensor technology and the related cognitive approaches for robotics that operate in domains with restricted visibility. The focus is on civil robots supporting fire brigades in search and rescue missions, e.g. in post-disaster management operations in response to tunnel fires. It will deliver software and hardware components which facilitate robot systems to perform under harsh conditions of smoke, dust or fog. SmokeBot will improve the abilities of the selected platform, thus increasing safety of rescue staff and European citizens.
Website	http://aass.oru.se/Research/mro/smokebot/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Orebro University (SE) Consortium: 2. Fraunhofer Gesellschaft Zur Foerderung Der Angewandten Forschung E.V. (DE) 3. Gottfried Wilhelm Leibniz Universitaet Hannover (DE) 4. Stadt Dortmund (DE) 5. Taurob Gmbh (AT) 6. The University Of Warwick (UK)

TransCrisis	
Title	Enhancing the EU's Transboundary Crisis Management Capacities: Strategies for Multi-Level Leadership (TransCrisis)
Contract details	Europe in a changing world - Inclusive, innovative and reflective societies Call: H2020-EURO-SOCIETY-2014 Topic code: EURO-4-2014 April 2015 / April 2018 - EUR: 2.280.209,00 REA - 649484
Abstract	This project outlines the institutional requirements for effective and legitimate crisis leadership at EU level in the face of transboundary crisis. The project analyses the capacities of political leaders in EU institutions and member states to fulfill these leadership functions. It will pinpoint the existing and required capacities to support these functions; investigate the crisis management capacities of individual political leaders and EU institutions; explore the effects of political leadership at MS level; and study how crisis management capacity is exercised in various policy sectors. The project will result in: recommendations for effective and legitimate crisis leadership; a 'crisis management capital index' that allows for an evidence-based assessment; and strategies to build support for transboundary crisis management in a multilevel system, reconnecting citizens with an idea of what the EU can do for them.
Website	https://www.transcrisis.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. London School Of Economics And Political Science (UK) Consortium: 2. Crisisplan B.V. (NL) 3. Institut Barcelona D Estudis Internacionals, Fundacio Privada (ES) 4. Kozep-Europai Egyetem (HU) 5. Stockholms Universitet (SE) 6. Taenketanken Europa (Taenketanken) (DK) 7. Universita Degli Studi Di Catania (IT) 8. Universiteit Utrecht (NL)

1.1.5 Earth observation support

Earth observation tools are mainly developed within projects funded by the Space Programme. As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Earth Observation support	AVERT BONAS COMMONSENSE EMPHASIS ENCOUNTER HOMER LOTUS OPTIX PREVAIL ROSFEN SALIANT SUBCOP

These projects were complemented in the H2020 framework by the following projects:

EGSIEM	
Title	European Gravity Service for Improved Emergency Management (EGSIEM) ***This project also corresponds to the categories 'Flood risks' and 'Drought risks'.***
Contract details	Leadership in enabling and industrial technologies Call: H2020-EO-2014 Topic code: EO-1-2014 January 2015 / January 2018 - EUR: 1.752.050,00 REA - 637010
Abstract	The aim of this proposal is to demonstrate that mass redistribution products open the door for innovative approaches to flood and drought monitoring and forecast. The timeliness and reliability of information is the primary concern for any early-warning system. We aim to increase the temporal resolution from one month, typical for GRACE products, to one day and to provide gravity field information within 5 days (near real-time). Early warning indications derived from these products are expected to improve the timely awareness of potentially evolving hydrological extremes and to help in the scheduling of high-resolution follow-up observations. Data products and indicators will be provided for its future use within international initiatives such as the Copernicus Emergency Management Service and the International Charter "Space and Major Disasters". Three dedicated services will be provided: 1) a scientific combination service, 2) a near real-time service and 3) a hydrological/early warning service.
Website	http://www.egsiem.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Universitaet Bern (CH) Consortium: 2. Centre National D'etudes Spatiales – Cnes (FR) 3. Deutsches Zentrum Fuer Luft - Und Raumfahrt Ev (DE) 4. Geode & Cie (FR) 5. Gottfried Wilhelm Leibniz Universitaet Hannover (DE) 6. Helmholtz Zentrum Potsdam Deutschesgeoforschungszentrum Gfz (DE)

GEO VISION	
Title	GNSS driven EO and Verifiable Image and Sensor Integration for mission-critical Operational Networks (GEO VISION)
Contract details	Leadership in enabling and industrial technologies Call: H2020-Galileo-2014-1 Topic code: GALILEO-2-2014 January 2015 / January 2017 - EUR: 999.653,25 GSA - 641451
Abstract	GEO-VISION is an user-driven project developing interactive mission-critical visual communications software solution. The focus is operationally relevant visual content from photos and video, based on GNSS, for reducing financial and humanitarian impacts of disasters. GEO-VISION allows users to focus on relevant and trusted operational content.
Website	http://www.geo-vision.space/ http://www.egsiem.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Ansur Technologies AS (NO) Consortium: 2. D'appolonia Spa (IT) 3. D.M.A.T. Consulting Kg (AT) 4. Johanniter-Unfall-Hilfe Ev (DE) 5. United Nations Institute For Training And Research (CH) 6. Universitat Autonoma De Barcelona (ES)

1.1.6 Cost assessments of hazards

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 project is described.

Research sub-category	FP7 projects
Cost assessments of hazards	CONHAZ

In Horizon2020, no dedicated research projects or studies have been carried out in the area of cost assessments of hazards.

1.2 Climate hazards

Preparedness and adaptation planning to threats related to climate change are defined **in the EU Adaptation Strategy to Climate Change**, which calls for bridging the knowledge gap, in particular on damage and adaptation costs and benefits, regional and local-level analyses and risk assessments, tools to support decision-making, monitoring and evaluating past adaptation efforts. Links with Horizon2020 DRS topics have been designed in this respect. This section highlights projects dealing with risk management-related tools and technologies that are applicable mainly to climate-related hazards – Forest fires are included in this category, keeping in mind that they also may be due to intentional man-made actions.

1.2.1 Multi-climate hazard risk prevention, awareness, preparedness, resilience

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Multi-climate hazard risk prevention, awareness, preparedness, resilience	CLIMB CLUVA EUPORIAS KNOW4DRR INTACT KULTURISK RAIN WASSERMED

Complementing the above, risk prevention and reduction of climate-related disasters are subject to continuous major research efforts, namely:

ANYWHERE	
Title	EnhANcing emergencY management and response to extreme WeatHER and climate Events (ANYWHERE)
Contract details	H2020 Secure Societies Call: H2020-DRS-2015 Topic code: DRS-01-2015 June 2016 / August 2019 - EUR 11,973,367 REA - 700099
Abstract	Implementation of a Pan-European, multi-hazard platform providing a better identification of the expected weather-induced impacts and their location in time and space before they occur. The platform empowers exposed responder institutions and citizens to enhance their anticipation and pro-active response capacity to face extreme and high-impact weather and climate events by capitalizing on the advanced forecasting methodologies and impact models made available by previous RTD projects, maximizing the uptake of their innovative potential not fully exploited up to now. Provision of early warning products and locally customizable decision support services proactively targeted to the needs and requirements of authorities, public /private operators of critical infrastructures and networks.
Website	http://anywhere-h2020.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Univ. Politecnica de Catalunya (ES) Consortium 2. Agència Catalana de l'Aigua (ES) 3. Agencia de Medio Ambiente y Agua de Andalucia (ES) 4. ARPAL (IT) 5. Airbus SAS (FR) 6. Centre National de la Recherche Scientifique CNRS (FR) 7. Fondazione CIMA (IT) 8. Comune di Genova (IT) 9. Consorzio Futuro in Ricerca (IT) 10. D'Appolonia SPA (IT) 11. Departament d'Interior – Catalunya (ES) 12. Direccion General de Proteccion Civil y Emergencias (ES) 13. Direction de l'Economie Publique – Berne (CH) 14. Euro. Centre for Medium-Range Weather Forecasts (UK) 15. GEO 7 Ag (CH) 16. Helmholtz-Zentrum fuer Umweltforschung Gmbh – UFZ (DE) 17. Helse Stavanger HF (NO) 18. Hydrometeorological Innovative Solutions (ES) 19. Ilmatieteen Laitos (FI) 20. JRC (BE) 21. Kajo SRO (SK) 22. Meteodat Gmbh (CH) 23. Finland Ministry of the Interior (FI) 24. Scuola Superiore di Studi Universitari e di Perfezionamento Sant'anna (IT) 25. Service Departemental d'Incendie et de Secours de la Haute-Corse (FR) 26. Stiftelsen Sintef (NO) 27. Univ. of Reading (UK) 28. Univ. Paderborn (DE) 29. Univ. de Geneve (CH) 30. Univ. de Nice Sophia Antipolis (FR) 31. Wageningen Univ. (NL)

beAWARE	
Title	Enhancing decision support and management services in extreme weather climate events (beAWARE) ***This project also corresponds to the category 'Multi-hazards situation awareness / early warning'.***
Contract details	H2020 Secure Societies Call: H2020-DRS-2015 Topic code: DRS-01-2015 January 2017 / December 2019 - EUR 5,953,780 REA - 700475
Abstract	Development of an integrated solution to support forecasting, early warnings, transmission and routing of the emergency data, aggregated analysis of multimodal data and management the coordination between the first responders and the authorities during all phases of an emergency incident. The solution will rely on platforms, theories and methodologies that are already used for disaster forecasting and managerment, supplemented with additional elements required for operational efficiency. The context is based in the domain of situational awareness and command and control (C2).
Website	http://beaware-project.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Ethniko Kentro Erevnas Kai Technologikis Anaptyxis (EL) Consortium: 2. Autorita di Bacino dei Fiumi Isonzo Tagliamento Livenza Piave Brenta Bacchiglione (IT) 3. Ayuntamiento de Valencia (ES) 4. Elliniki Omada Diasosis Somateio (EL) 5. Fraunhofer Gesellschaft zur Foerderung der Angewandten Forschung E.V.(DE) 6. Frederiksborg Brand og Redning (DK) 7. IBM Israel (IL) 8. Ilmatieteen Laitos (FI) 9. Motorola Solutions Israel Ltd (IL) 10. Universidad Pompeu Fabra (ES)

BRIGAID	
Title	BRIdges the GAp for Innovations in Disaster resilience (BRIGAID)
Contract details	H2020 Secure Societies Call: H2020-DRS-2015 Topic code: DRS-09-2015 May 2016 / April 2020 - EUR 7,739,805.79 EASME - 700699
Abstract	Bridging the gap between innovative solutions aimed at reducing the increased climate change risks and their market up-take. Three pillars of the approach: (1) consideration of geographic variability of climate-related hazards and their interaction with socio-economic changes; (2) establishment of structural, on-going support for innovations, which are validated in field tests and live-demos; (3) development of a framework enabling independent, scientific judgement of an innovation's socio-technological effectiveness. Activities include the development of a technological and performance standards for adaptation options by providing a Test and Implementation Framework (TIF) and test facilities throughout Europe; establishment of an innovators network and development of business models and market outreach.
Website	http://brigaid.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Technische Universiteit Delft (NL) Consortium: 2. Agjencia Kombetare e Planifikimit te Territorit (AL) 3. APA Proiect SRL (RO) 4. Aquaproiect SA (RO) 5. Consus Carbon Engineering Spolka z Ograniczona Odpawiedzialnoscia (PL) 6. D'Appolonia SPA (IT) 7. Ecologic Institut Gemeinnützige Gmbh (DE) 8. Futurewater SL (ES) 9. Geomatics Research & Development SRL (IT) 10. GIFF Gestao Integrada De Fogos Florestais SA (IT) 11. HKV Lijn in Water BV (NL) 12. I-Catalist SL (ES) 13. Instituto Superior de Agronomia (PT) 14. International Center for Research on the Environment and the Economy (EL) 15. Katholieke Universiteit Leuven (BE) 16. L'Orangerie Studio (ES) 17. Migal Galilee Research Institute Ltd (IL) 18. National Administration Apele Romane (RO) 19. Spectrum Construct SRL (RO) 20. Funding Company (NL) 21. Thetis SPA (IT) 22. Univ. di Bologna (IT) 23. Univ. of Oxford (UK) 24. Univ. Tehnica de Constructii Bucuresti (RO) 25. Univ. Catholique de Louvain (BE)

CLISEL	
Title	"Climate Security with Local Authorities" From insecurity takers to security makers: mobilizing local authorities to secure the EU against the impacts of climate change in Third Countries (CLISEL)
Contract details	H2020 Secure Societies Call: H2020-DRS-2015 Topic code: DRS-22-2015 May 2016 / April 2019 - EUR 889,205.00 REA - 700385
Abstract	CLISEL looks at the issue of climate-induced migration and aims to understand the extent to which migrants from ecologically vulnerable Third Countries are perceived as a security issue, the reasons why that is (not) the case, as well as the policies and actions through which local administrators can ward off the emergence of security crisis within their territory.
Website	http://www.clisel.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Universita degli Studi di Cagliari (IT) Consortium: 2. Consiglio delle Autonomie Locali Sardegna (IT) 3. Kungliga Tekniska Hoegskolan (SE) 4. Lancaster Univ. (UK) 5. Univ, Bern (CH)

EU-CIRCLE	
Title	A panEuropean framework for strengthening Critical Infrastructure resilience to climate change (EU-CIRCLE) ***This project also corresponds to the category 'Critical Infrastructure Resilience'.***
Contract details	H2020 Secure Societies Call: H2020-DRS-2014 Topic code: DRS-09-2014 June 2015 / June 2018 - EUR: 7,283,525.00 EASME - 653824
Abstract	Development of an innovative framework for supporting the interconnected European Infrastructure's resilience to climate pressures, supported by an end-to-end modelling environment where new analyses can be added anywhere along the analysis workflow and multiple scientific disciplines can work together to understand interdependencies, validate results, and present findings in a unified manner providing an efficient "Best of Breeds" solution of integrating into a holistic resilience model existing modelling tools and data in a standardised fashion. It, will be open and accessible to all interested and it will be complemented with a webbased portal allowing users to introduce fully tailored solutions and infrastructure data, by defining and implementing customised impact assessment models, and use climate / weather data on demand.
Website	http://www.eu-circle.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. National Center for Scientific Research 'Demokritos'(EL) Consortium: 2. Aditess Advanced Integrated Technology Solutions & Services Ltd. (CY) 3. Akademia Morska W Gdyni (PL) 4. Artelia Eau et Environnement Sas (FR) 5. D'Appolonia Spa (IT) 6. Drzavna Uprava za zastitu I spasavanje (HR) 7. Drzavni Hidrometeoroloski Zavod (HR) 8. Entente pour la Foret Mediterraneenne (FR) 9. European University Cyprus (CY) 10. Fraunhofer Gesellschaft zur Foerderung der Angewandten Forschun E.V. (DE) 11. Kentro Meleton Asfaleias Meteorologisk Institutt (NO) 12. Ministry of National Defence, Greece (EL) 13. MRK Management Consultants GMBH (DE) 14. Satways – Proionta Kay Ypiresies Tilematikis Diktyakon Kai Tilepikinoniakon Efarmogon Etairia Periorismenis Efthinis Epe (EL) 15. The council of the Borough of Torbay (UK) 16. The University of Exeter (UK) 17. The Univversity of Huddersfield (UK) 18. The University of Salford (UK) 19. Veleuciliste Velika Gorica (HR) 20. Xuvasi Ltd (UK)

HERACLES	
Title	HEritage Resilience Against CLimate Events on Site (HERACLES)
Contract details	H2020 Secure Societies Call: H2020-DRS-2015 Topic code: DRS-11-2015 May 2016 / May 2019 - EUR: 6,564,313.75 EASME - 700395
Abstract	The main objective is to design, validate and promote responsive systems/solutions for effective resilience of CH against climate change effects, considering as a mandatory premise a holistic, multidisciplinary approach through the involvement of different expertise. This entails the development of a system exploiting an ICT platform able to collect and integrate multisource information in order to effectively provide complete and updated situational awareness and support decision. The strength of HERACLES solutions is their flexibility in evaluating a big quantity of different information that can be changed and tailored to the specific CH assets needs, guaranteeing in that way a general applicability.
Website	http://www.heracles-project.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Consiglio Nazionale Delle Richerche (IT) Consortium: 2. Aria Technologies SA (FR) 3. Comune di Gubbio (IT) 4. Consorzio Interuniversitario Nazionale per la Scienze e Technologia dei Materiali (IT) 5. CVR S.R.L. (IT) 6. E-Geos Spa (IT) 7. Ephorate of Antiquities of Heraklion (EL) 8. European Materials Research Society (FR) 9. Foundation for Research and Technology Hellas (EL) 10. Fraunhofer Gesellschaft zur Foerderung der Angewandten Forschung E.V. (DE) 11. Leonardo – Societa per Azioni (IT) 12. Panepistimio Kritis (EL) 13. Sistema GMBH (AT) 14. Thales Italia Spa (IT) 15. Thales SA (FR) 16. The International Emgergency Management Society Aisbl (BE) 17. Uninova-Instituto de Desenvolvimento de novas Tecnologias-Associacao (PT) 18. Universita Degli Studi di Perugia (IT)

PLACARD	
Title	PLAtform for Climate Adaptation and Risk reDuction (PLACARD)
Contract details	H2020 Secure Societies Call: H2020-DRS-2014 Topic code: DRS-09-2014 June 2015 / June 2020 - EUR: 2,852,760.00 RTD - 653255
Abstract	PLACARD will tackle current challenges by (1) providing a common 'space' where CCA and DRR communities can come together, share experiences and create opportunities for collaboration; (2) facilitating communication and knowledge exchange between both communities; and (3) supporting the coordination and coherence of CCA and DRR research, policy and practice. The approach will establish a strong and operational network of networks by connecting to existing networks and boundary organisations, to foster dialogue among stakeholders, supported by an online platform. This overarching network will enable these communities to share knowledge, to discuss challenges and to jointly co-produce options to bridge the gaps they experience.
Website	http://www.placard-network.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Fundacao da Faculdade de Ciencias da Universidae de Lisboa FP (PT) Consortium: 2. Fondazione Centro Euro-Mediterraneo sui Cambiamenti Climatici (IT) 3. Helmholtz-Zentrum fuer Umweltforschung GMBH – UFZ (DE) 4. Sei Oxford office Limited Stockholm Environment Institute Oxford Office Sei Ltd (UK) 5. Stichting International Red Cross Red Crescent Centre on Climate Change and Disaster Preparedness (NL) 6. Stichting Wageningen Research (NL) 7. Stiftelsen the Stockholm Environment Institute (SE) 8. The Chancellor, Master and Scholars of the University of Oxford (UK) 9. Umweltbundesambt GMBH (AT) 10. United Nations International Strategy for Disaster Reduction (CH) 11. Univ. de Geneve (CH)

RESCCUE	
Title	RESilience to cope with Climate Change in Urban arEas - a multisectorial approach focusing on water (RESCCUE) ***This project also corresponds to the category 'Resilience of urban built environments'.***
Contract details	H2020 Secure Societies Call: H2020-DRS-2015 Topic code: DRS-09-2015 May 2016 / May 2020 - EUR: 6.896.991,76 EASME - 700174
Abstract	RESCCUE aims to deliver a framework enabling city resilience assessment, planning and management. These tools will assess urban resilience from a multisectorial approach, for current and future climate change scenarios and including multiple hazards. The possible approaches will be ranked by their cost-efficiency in terms of CAPEX and OPEX to evaluate their benefits potential. This will enable city managers and urban system operators deciding the optimal investments to cope with future situations.
Website	http://www.resccue.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Aquatec Proyectos para el sector del Agua SA (ES) Consortium: 2. ADP Aguas de Portugal SGPS SA (PT) 3. Ajuntament de Barcelona (ES) 4. Bristol City Council (UK) 5. Camara Municipal de Lisboa (PT) 6. Cetaqua, centro Tecnologico del Agua, Fundacion Privada (ES) 7. Ecole des Ingenieurs de la Ville de Paris (FR) 8. EDO Distribuicao Energia SA (PT) 9. Endesa Distribucion Electrica SL (ES) 10. Epal-Emprese Portuguesa das Aguas Livres SA (PT) 11. Fundacio Institut de Recerca de l'Energia de Catalunya (ES) 12. Fundacion para la Investigacion del Clima (ES) 13. HIDRA – Hidraulica e Ambiente LDA (PT) 14. Laboratorio Nacional de Engenharia CIVIL (PT) 15. Opticits Ingernieria Urbana SL (ES) 16. Suez Advanced Solutions UK Limited (UK) 17. Univ. of Exeter (UL) 18. United Nations Human Settlements Programme (KE) 19. Urban DNA Solutions LLP (UK)

RESIN	
Title	Climate Resilient Cities and Infrastructures (RESIN) ***This project also corresponds to the category 'Resilience of the urban built environment'.***
Contract details	H2020 Secure Societies Call: H2020-DRS-2014 Topic code: DRS-09-2014 May 2015 / November 2018 - EUR: 7,466,004.50 EASME - 653522
Abstract	The objective of RESIN is to provide standardised methodologies for vulnerability assessments, performance evaluations of adaptation measures, and for decision support tools supporting the development of robust adaptation strategies tailored to the city. RESIN aims to create a common unifying framework that allows comparing strategies, results and identification of best practices by (1) creating an urban typology that characterises European cities; (2) delivering standardised methods for assessing climate change impacts, vulnerabilities, and risks; (3) collaborating closely with 4 'case cities' for practical applicability and reproducibility; (4) integrating findings in a coherent framework for the decision making process, with associated methods, tools and datasets.
Website	http://www.resin-cities.eu/home/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Nederlandse Organisatie Voor Toegepast Natuurwetenschappelijk Onderzoek TNO (NL) Consortium 2. Arcadis Nederland BV (NL) 3. Asociacion Bc3 Basque Centre For (ES) Climate Change - Klima Aldaketa Ikergai 4. Ayuntamiento de Bilbao (ES) 5. Ecole des Ingenieurs de la Ville Deparis (FR) 6. Fraunhofer Gesellschaft zur Foerderung Der Angewandten Forschung E.V.(DE) 7. Fundacion Tecnalia Research & Innovation (ES) 8. Hlavne Mesto Slovenskej Republiky Bratislava (SK) 9. Iclei European Secretariat Gmbh (Iclei Europasekretariat Gmbh) (DE) 10. Itti Sp Zoo (PL) 11. Oldham Metropolitan Borough Council (UK) 12. Siemens Aktiengesellschaft (DE) 13. Siemens Aktiengesellschaft Oesterreich (AT) 14. Stichting Nederlands Normalisatie – Instituut NL) 15. The University Of Manchester (UK) 16. Uniresearch BV (NL) 17. Univerzita Komenskeho V Bratislave (SK)

STORM	
Title	Safeguarding Cultural Heritage through Technical and Organisational Resources Management (STORM)
Contract details	H2020 Secure Societies Call: H2020-DRS-2015 Topic code: DRS-11-2015 June 2016 / June 2019 - EUR: 7,297,875.00 EASME - 700191
Abstract	STORM proposes a set of predictive models and improved non-invasive and non-destructive methods of survey and diagnosis, for effective prediction of environmental changes and for revealing threats and conditions that could damage cultural heritage sites. STORM will determine how different vulnerable materials, structures and buildings are affected by different extreme weather events together with risks associated to climatic conditions or natural hazards, offering improved, effective adaptation and mitigation strategies, systems and technologies. An important result of STORM will be a cooperation platform for collaboratively collecting and enhancing knowledge, processes and methodologies on sustainable and effective safeguarding and management of European Cultural Heritage. The system will be capable of performing risk assessment on natural hazards taking into account environmental and anthropogenic risks, and of using Complex Events processing.
Website	http://www.storm-project.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Engineering - Ingegneria Informatica Spa (IT) Consortium: 2. Direcao Geral do Patrimonio Cultural (PT) 3. Ephorate of Antiquities of Rethymno (EL) 4. Foundation for Research and Technology Hellas (EL) 5. Inov Inesc Inovacao - Instituto de Novas Tecnologias (PT) 6. Kpeople Ltd (UK) 7. Mellor Archaeological Trust (UK) 8. Ministero Dell'interno (IT) 9. Municipio de Grandola (PT) 10. Nova Conservacao - Restauro e Conservacao do Patrimonio Artistico-Cultural Lda (PT) 11. Resiltech Srl (IT) 12. Soprintendenza Speciale per Il Colosseo Il Museo Nazionale Romano e L'area Archeologica Di Roma (IT) 13. Sparta Technologies Ltd (UK) 14. Technological Educational Institute Of Piraeus (EL) 15. The University of Salford (UK) 16. Troiaresort - Investimentos Turísticos, S.A. (PT) 17. Universita Degli Studi Della Tuscia (IT) 18. Universitaet Stuttgart (DE) 19. Zentralanstalt fur Meteorologie Undgeodynamik (AT)

Climate europe	
Title	Bringing INnovation to onGOing water management – A better future under climate change (Climate europe) ***This project also corresponds to the categories 'Flood risks' and 'Drought risks'.***
Contract details	Climate Action, Environment, Resource Efficiency and Raw Materials Call: H2020-WATER-2014-two-stage Topic code: WATER-2a-2014 July 2015 / July 2019 - EUR: 7.822.422,50 EASME - 641739
Abstract	BINGO will provide demand-driven solutions for a number of specific climate-related challenges in particular for highly vulnerable water resources of strategic importance. BINGO aims at reducing the uncertainty of climate predictions and developing response management strategies for future weather challenges to help society manage that uncertainty. BINGO will develop and validate all solutions built by strong dynamic interaction of researchers with end-users and decision makers throughout the project. By creating such knowledge alliances, water managers and other stakeholders can share awareness of climate challenges, thus increasing the possibilities of collaboration in order to manage and better cope with future climate challenges.
Website	http://www.projectbingo.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Laboratorio Nacional De Engenharia Civil (PT) Consortium: 2. Aigues De Barcelona, Empresa Metropolitana De Gestio Del Cicle Integral De L'aigua SA (ES) 3. Ajuntament De Badalona (ES) 4. Aquatec Proyectos Para El Sector Del Agua SA (ES) 5. Area Metropolitana De Barcelona (ES) 6. Bergen Kommune (NO) 7. Cetaqua, Centro Tecnologico Del Agua, Fundacion Privada (ES) 8. Comunidade Intermunicipal Da Leziria Do Tejo (PT) 9. Direcao-Geral De Agricultura E Desenvolvimento Rural (PT) 10. Epal-Empresa Portuguesa Das Águas Livres, SA (P)T 11. Freie Universitaet Berlin (DE) 12. Gelderland (NL) 13. I.A.Co Environmental And Water Consultants Ltd (CY) 14. Interwies Eduard (DE) 15. Iww Rheinisch Westfalisches Institut Fur Wasserforschung Gemeinnutzige GMBH (DE) 16. Kwr Water B.V. (NL) 17. Norges Teknisk-Naturvitenskapelige Universitet Ntnu (NO) 18. Sociedade Portuguesa De Inovacao - Consultadoria Empresarial E Fomento Da Inovacao S.A. (PT) 19. The Cyprus Institute (CY) 20. Vitens Nv (NL) 21. Wupperverband (DE)

Climateurope	
Title	European Climate Observations, Modelling and Services – 2 (Climateurope) ***This project also corresponds to the categories 'Earth Observation Support.***
Contract details	Climate Action, Environment, Resource Efficiency and Raw Materials Call: H2020-SC5-2015-one-stage Topic code: SC5-05b-2015 December 2015 / December 2020 - EUR: 2.994.372,50 EASME - 689029
Abstract	The Climateurope Action will coordinate and support Europe's knowledge base to enable better management of climate-related risks and opportunities thereby creating greater social and economic value. Climateurope has four main objectives:1) Develop a European framework for Earth-system modelling and climate service activities, built around a managed network of European, national and international activities and organisations. 2) Coordinate and integrate European climate modelling, climate observations and climate service infrastructure initiatives and facilitate dialogue among the relevant stakeholders. 3) Establish multi-disciplinary expert groups to assess the state-of-the-art in Earth-system modelling and climate services in Europe. 4) Enhance communication and dissemination activities with stakeholders. Two key impacts are (i) to greatly enhance the transfer of information between suppliers and users to improve the resilience of European society to climate change and mitigation of the risk of dangerous climate change; and (ii) to increase efficiency through improved coordination, to reduce fragmentation and create synergies with international R&I programmes.
Website	https://www.climateurope.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Met Office (UK) Consortium: 2. Agence Nationale De La Recherche (FR) 3. Barcelona Supercomputing Center - Centro Nacional De Supercomputacion (ES) 4. Centre National De La Recherche Scientifique Cnrs (FR) 5. European Centre For Medium-Range Weather Forecasts (UK) 6. Fondazione Centro Euro-Mediterraneo Sui Cambiamenti Climatici (IT) 7. Helmholtz-Zentrum Geesthacht Zentrum Fur Material- Und Kustenforschung GMBH (DE) 8. Imperial College Of Science Technology And Medicine (UK) 9. Koninklijk Nederlands Meteorologisch Instituut-KNMI (NL) 10. Republicki Hidrometeoroloski Zavodsrbije (RS) 11. Sveriges Meteorologiska Och Hydrologiska Institut (SE)

ERA4CS	
Title	European Research Area for Climate Services (ERA4CS)
Contract details	Climate Action, Environment, Resource Efficiency and Raw Materials Call: H2020-SC5-2015-one-stage Topic code: SC5-02-2015 January 2016 / January 2021 - EUR: 25.000.000,00 RTD - 690462
Abstract	ERA4CS will focus on the development of a "climate information translation" layer bridging "user communities" and "climate system sciences". ERA4CS will boost the JPI Climate initiative by mobilizing more countries, within EU Member States and Associated Countries, by involving both research performing organizations (RPOs) and research funding organizations (RFOs), as well as distinct national climate services and academia. Additional activities will initiate a strong partnership between JPI Climate and others key European and international initiatives (as Copernicus, KIC-Climate, JPIs, WMO/GFCS, Future Earth, Belmont Forum) in order to work towards a common vision and a multiyear implementation strategy, including better co-alignment of national programs and activities up to 2020 and beyond.
Website	http://www.jpi-climate.eu/ERA4CS https://www.climateurope.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Agence Nationale De La Recherche (FR) Consortium: 2. Administratia Nationala De Meteorologie R.A. (RO) 3. Agencia Estatal Consejo Superior Deinvestigaciones Cientificas (ES) 4. Agencia Estatal De Meteorologia (ES) 5. Alfred-Wegener-Institut Helmholtz- Zentrum Fuer Polar- Und Meeresforschung (DE) 6. Barcelona Supercomputing Center - Centro Nacional De Supercomputacion (ES) 7. Bundesministerium Für Wissenschaft, Forschung Und Wirtschaft (AT) 8. Bureau De Recherches Geologiques Et Minieres (FR) 9. Centre National De La Recherche Scientifique Cnrs (FR) 10. Centrum Vyzkumu Globalni Zmeny Av Cr Vvi (CZ) 11. Commissariat A L Energie Atomique Et Aux Energies Alternatives (FR) 12. Consiglio Nazionale Delle Ricerche (IT) 13. Danmarks Meteorologiske Institut (DK) 14. Department Of Housing, Planning, Community And Local Government (IE) 15. Deutsches Zentrum Fuer Luft - Und Raumfahrt Ev (DE) 16. Environmental Protection Agency Of Ireland (IE) 17. Fondazione Centro Euro-Mediterraneo Sui Cambiamenti Climatici (IT) 18. Forskningsrådet För Miljö, Areella Näringar Och Samhällsbyggande (SE) 19. Fundacao Da Faculdade De Ciencias Da Universidade De Lisboa Fp (PT) 20. Fundacao Para A Ciencia E A Tecnologia (PT) 21. Fundacion Instituto De Hidraulica Ambiental De Cantabria (ES) 22. Helmholtz-Zentrum Geesthacht Zentrum Fur Material- Und Kustenforschung Gmbh (DE) 23. Ilmatieteen Laitos (FI) 24. Innovationsfonden (DK) 25. Institut National De La Recherche Agronomique (FR) 26. Institut National De L'informationgeographique Et Forestiere (FR) 27. Institut Royal Meteorologique De Belgique (BE) 28. Koninklijk Nederlands Meteorologisch Instituut-KNMI (NL) 29. Meteo-France (FR) 30. Meteorologisk Institutt (NO)

ERA4CS	
	31. Met Office (UK) 32. Ministerio De Economia, Industria Y Competitividad (ES) 33. Ministero Dell'istruzione, Dell'universita' E Della Ricerca (IT) 34. National Center For Scientific Research "Demokritos" (EL) 35. Natural Environment Research Council (UK) 36. Nederlandse Organisatie Voor Wetenschappelijk Onderzoek (NL) 37. Norges Forskningsrad (NO) 38. Norges Vassdrags- Og Energidirektorat (NO) 39. Service Public Federal De Programmation Politique Scientifique (BE) 40. Slovenska Akademia Vied (SK) 41. Suomen Ymparistokeskus (FI) 42. Sveriges Meteorologiska Och Hydrologiska Institut (SE) 43. The University Of Reading (UK) 44. Uni Research As (NO) 45. Unitatea Executiva Pentru Finantarea Invatamantului Superior, A Cercetarii, Dezvoltarii Si Inovarii (RO) 46. Universidad De Cantabria (ES) 47. Universitaet Graz (AT) 48. Universitat Rovira I Virgili (ES) 49. Universite De Versailles Saint-Quentin-En-Yvelines. (FR) 50. Universite Grenoble Alpes (FR) 51. Universite Paris Xii Val De Marne (FR) 52. Universite Paul Sabatier Toulouse Iii (FR) 53. Universite Pierre Et Marie Curie - Paris 6 (FR)

CENTAUR	
Title	Cost Effective Neural Technique for Alleviation of Urban Flood Risk (CENTAUR)
Contract details	Climate Action, Environment, Resource Efficiency and Raw Materials Call: H2020-WATER-2014-two-stage Topic code: WATER-1a-2014 September 2015 / September 2018 - EUR: 2.548.395,63 EASME - 641931
Abstract	CENTAUR will develop a new market ready approach to RTC of sewer networks with the aim of reducing local flood risk in urban areas. This proposal will develop a novel low cost de-centralised, autonomous RTC system. This RTC system will utilise data driven distributed intelligence combined with local, low cost monitoring systems installed at key points within existing sewer infrastructure. The system will utilise mechanically simple, robust devices to control flow in order to reduce flood risk at vulnerable sites. This system will be informed and governed directly by sensors distributed within the local network, without the need for an expensive hydrodynamic model or real time rainfall measurements.
Website	https://www.sheffield.ac.uk/centaur/index
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. The University Of Sheffield (UK) Consortium: 2. Ac Aguas De Coimbra EM (PT) 3. Eidgenoessische Anstalt Fuer Wasserversorgung Abwasserreinigung Und Gewaesserschutz (CH) 4. Environmental Monitoring Solutions Limited (UK) 5. Steinhardt Gmbh (DE) 6. Universidade De Coimbra (PT) 7. Veolia Water Outsourcing Limited (UK)

FLOOD-serv	
Title	Public FLOOD Emergency and Awareness SERVice (FLOOD-serv)
Contract details	Europe in a changing world - Inclusive, innovative and reflective societies Call: H2020-INSO-2015-CNECTTopic code: INSO-1-2015 Augustus 2016 / Augustus 2019 - EUR: 2.528.630,63 REA - 693599
Abstract	The overall objective of FLOOD-serv is to develop and to provide a pro-active and personalised citizen-centric public service application that will enhance the involvement of the citizen and will harness the collaborative power of ICT networks (networks of people, of knowledge, of sensors) to raise awareness on flood risks and to enable collective risk mitigation solutions and response actions. Other general objectives are:1) Empowering local communities to directly participate in the design of emergency services dealing with floods mitigation actions.2) Harness the power of new technologies, such as social media, and mobile technologies to increase the efficiency of public administrations in raising public awareness and education regarding floods risks, effects and impact.3) Encourage the development and implementation of long-term, cost-effective and environmentally sound mitigation actions related to floods though an ICT-enabled cooperation and collaboration of all stakeholders.
Website	http://www.floodserv-project.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Siveco Romania Sa (RO) Consortium: 2. A.N.O. Sistemas De Informatica e Servicos Lda (PT) 3. Answaretech Sl (ES) 4. Ayuntamiento De Bilbao (ES) 5. Bratislavsky Samospravny Kraj (SK) 6. Cellent Ag (AT) 7. Comune Di Genova (IT) 8. Exdwarf Consulting Sro (SK) 9. Government To You (BE) 10. Institutia Prefectului Judetul Tulcea (RO) 11. Institutul National De Cercetare-Dezvoltare Delta Dunarii (RO) 12. Municipio De Vila Nova De Famalicao (PT)

IMPREX	
Title	IMproving PRedictions and management of hydrological EXtremes (IMPREX)
Contract details	Climate Action, Environment, Resource Efficiency And Raw Materials Call: H2020-WATER-2014-Two-Stage Topic Code: WATER-2a-2014 October 2015 / October 2019 - EUR: 7.996.848,00 EASME - 641811
Abstract	Imprex targets the quality of short-to-medium hydro-meteorological predictions and aims to enhance the reliability of future climate projections, apply this information to strategic sectoral and pan-european surveys at different scales, and evaluate and adapt current risk management strategies. The impact of forecasts of hydro-meteorologiacl extremes will be assessed by applying dynamic model ensembles, process studies, new data assimilation techniques and high resolution modelling. Novel climate change impact assessment concepts will focus at increasing the realism of relevant events by specific high resolution regional downscaling, explore compounding trans-sectoral and trans-regional risks, and design new risk management paradigms tob e demonstrated in impact surveys for strategic economic sectors. A pan-european assessment of risk management and adaptation strategies is applied, minimizing risk transfer from one sector or region to another. Key outreach products include: a periodic hydrological risk outlook for europe, incorporating the dynamic evolution of hydro-climatic and socio-economic processes; maximisation of surveys' legacy impacts, aimed at european public stakeholder and business networks, including user-friendly assessment summaries, and training material.
Website	http://www.imprex.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Koninklijk Nederlands Meteorologisch Instituut-KNMI (NL) Consortium: 2. Adelphi Research Gemeinnutzige Gmbh (DE) 3. Aquatec Proyectos Para El Sector Del Agua Sa (ES) 4. Arctik Sprl (BE) 5. Barcelona Supercomputing Center - Centro Nacional De Supercomputacion (ES) 6. Bundesanstalt Fuer Gewaesserkunde (DE) 7. Centro Internazionale In Monitoraggio Ambientale - Fondazione Cima (IT) 8. Cetaqua, Centro Tecnologico Del Agua, Fundacion Privada (ES) 9. European Centre For Medium-Range Weather Forecasts (UK) 10. Futurewater Sl (ES) 11. Helmholtz-Zentrum Geesthacht Zentrum Fur Material- Und Kustenforschung Gmbh (DE) 12. Helmholtz Zentrum Potsdam Deutschesgeoforschungszentrum Gfz (DE 13. Hkv Lijn In Water Bv (NL) 14. Institut National De Recherche En Sciences Et Technologies Pour L'environnement Et L'agriculture (FR) 15. Met Office (UK) 16. Politecnico Di Milano (IT) 17. Potsdam Institut Fuer Klimafolgenforschung (DE) 18. Stichting Deltares (NL) 19. Stichting VU (NL) 20. Stichting Water Footprint Network (NL) 21. Sveriges Meteorologiska Och Hydrologiska Institut (SE) 22. The Research Committee Of The Technical University Of Crete (EL) 23. The University Of Reading (UK) 24. Universitat Politecnica De Valencia (ES)

1.2.2 Flood risks

Flood early warning and alert systems, and more generally flood risk management operations have been subject to a wide range of research projects funded by various programmes. As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Flood risks	CORFU DCGGEOPHYS FLADAR FLOODCHANGE FLOODIS FLOODPROBE FLOODSAT FLOODSTAND IMPRINTS INFLATER INFLATER-DEMO MAN-U SMARTEST STARFLOOD URBANFLOOD

Complementing the above, flood-related research has been pursued through H2020, namely:

1.2.3 Drought risks

In the light of the Water Scarcity and Drought Communication, technological needs have been expressed regarding to drought risk assessment, trend studies and monitoring. Several research projects aimed to respond to these needs, namely projects by the FP7 Environment programme. As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Drought risks	DEWFORA DROUGHT-R&SPI

Complementing the above, research is continuing under H2020, namely:

WATER DROP	
Title	Droughts and Water Scarcity in the EU: Economic Impact, Adaptation, Policy Implications and Integrated Assessment Modelling (WATER DROP)
Contract details	Excellent Science Call: H2020-MSCA-IF-2015 Topic code: MSCA-IF-2015-EF October 2016 / October 2018 - EUR: 168.277,20 REA - 705408
Abstract	The objective of the research is twofold: on the one hand, obtain quantitative measures of the economic impact of droughts and test for the existence of adapting behaviour and, on the other hand, respond the demands of the IPCC that urge for progress in the integration and modelling of adaptation into climate-economy models. To do so, in a first stage econometric techniques will be apllied envisaged by the new climate-economy literature to regional, European-wide data to obtain estimates of the economic consequences of droughts and unveil potential adapting behaviour. Then, sophisticated climate-economy models, like CGE and IAM models, will be used to shed light into the modelling of adapting behaviour under deterministic and stochastic scenarios.
Website	https://www.feem.it/en/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Fondazione Eni Enrico Mattei (IT)

1.2.4 Coastal risks

Catastrophic events such as the Xynthia event in France (February 2010) highlighted research needs in the prevention / preparedness of coastal risks (in particular marine submersions), that were reflected in previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Coastal risks	MICORE PEARL RISC-KIT SIM.COAST THESEUS

In Horizon2020, no dedicated research projects or studies have been carried out in the area of climate change-related coastal risks, which are nevertheless covered by some of the projects described in section 1.2.1.

1.2.5 Forest fire risk prevention

Research on forest fires (from both natural and man-made causes) has been funded by several programmes. As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Forest fire risk prevention	AF3 FIRESENSE FIRESMART FUME PREFER

This area of research is pursued in H2020 in the framework of several projects, namely:

FireSpec	
Title	Integrated spectroscopic sensors for the risk assessment of fires (FireSpec)
Contract details	Excellent Science Call: ERC-2015-PoC Topic code: ERC-PoC-2015 March 2016 / September 2017 - EUR: 149.685,00 ERCEA - 693447
Abstract	FireSpec proposes the concept of an integrated wavelength modulation spectroscopic sensor for mobile, real time hazardous and toxic gas detection applications based on a silicon photonics integrated chip comprising a series of InP lasers, a gasprobe and an InP detector. The wavelengths of the lasers are matched with the mid-infrared (MIR) absorption lines of the gasses to be detected. The concept directly builds upon knowledge and technology developed in the ERC-project Miracle (Mid-InfraRed Active photonic integrated Circuits for Life sciences and Environment).
Website	https://www.ugent.be/en
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Universiteit Gent (BE)

FireAndRiskPrevention	
Title	When the smoke clears: predicting and preventing catastrophic erosion and flooding after wildfires in volcanic terrains (FireAndRiskPrevention)
Contract details	Excellent Science Call: H2020-MSCA-IF-2014 Topic code: MSCA-IF-2014-EF Augustus 2015 / Augustus 2017 - EUR: 195.454,80 REA - 655993
Abstract	This project proposes to use an innovative field, laboratory and modelling approach and carefully chosen implementation programme, involving the validation and application of novel erosion-risk tools. Where applied, these tools will reduce risks to lives and properties, for southern European countries, savings of over €375 million per year can be expected. The collaborative work plan, involving global leaders in academia, industry and management, not only provides me with multidisciplinary and inter-sectorial training of the highest standard. It also ensures the application of the best science and effective knowledge transfer from academia to the end-users.
Website	http://www.swansea.ac.uk/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Swansea University (UK)

GEO-SAFE	
Title	Geospatial based Environment for Optimisation Systems Addressing Fire Emergencies (GEO-SAFE) ***This project also corresponds to the category 'EO support'.***
Contract details	Excellent Science Call: H2020-MSCA-RISE-2015 Topic code: MSCA-RISE-2015 February 2016 / February 2020 - EUR: 1.080.000,00 REA - 691161
Abstract	GEO SAFE aims at creating a network enabling the two regions to exchange knowledge, ideas and experience , thus boosting the progress of wildfires knowledge and the related development of innovative methods for dealing efficiently with such fires. The GEO SAFE project will focus on developing the tools enabling to set up an integrated decision support system optimizing the resources during the response phase through: 1) Developing a dynamic risk cartography of a region with regard to the possibility of a wildfire. The task will involve data collection, risk analysis and development of a tool enabling to forecast fire extension, and in particular to predict fire and risk evolution during the response phase, 2) Designing and testing a resource allocation tool for the response phase using the dynamic risk cartography. One of the problems to consider will be the resource allocation for securing key places given time dependent constraints. Problems will be identified through connections with final users, and the proposed solutions will be tested on simulated data. 3) Developing analyses of relevant management processes as well as training tools in order to facilitate the implementation of such solution to be completed.
Website	http://geosafe.lessonsonfire.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. University Of Greenwich (UK) Consortium: 2. Bushfire And Natural Hazards Crc Limited (AU) 3. Centre National De La Recherche Scientifique Cnrs (FR) 4. Entente Pour La Forêt Méditerranéenne (FR) 5. Fundacio D'ecologia Del Foc I Gestio D'incendis Pau Costa Alcubierre (ES) 6. Royal Melbourne Institute Of Technology*Rmit University (AU) 7. Service Departemental D'incendie Et De Secours De La Haute-Corse (FR) 8. Universidad Complutense De Madrid (ES) 9. Universita Degli Studi Dell'aquila (IT) 10. Universita Degli Studi Di Perugia (IT) 11. Universite De Geneve (CH) 12. Universiteit Twente (NL) 13. University Of Melbourne (AU)

1.3 Geological hazards

Research and studies about geological hazards have been mainly undertaken by the Space and Environment programmes, covering tools and technological developments supporting various steps of crisis and disaster risk management.

1.3.1 Multi-geo hazard risk prevention, awareness, preparedness, resilience

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 project is described.

Research sub-category	FP7 projects
Multi-geo hazard risk prevention, awareness, preparedness, resilience	PanGEO

Geohazard data gathering has been subject to other H2020 projects, namely:

GEO-RAMP	
Title	Geohazards: Risk Assessment, Mitigation and Prevention (GEO-RAMP) ***This project also corresponds to the category 'Multi-climate hazard risk prevention, awareness, preparedness, resilience'.***
Contract details	Excellent Science Call: H2020-MSCA-RISE-2014 Topic code: MSCA-RISE-2014 April 2015 / April 2019 - EUR: 1.804.500,00 REA - 645665
Abstract	This proposal aims to provide a step change in terms of our capacity to assess and predict risks due to geohazards (landslides and rock slides, earthquakes, floods). The goals of this proposal are: 1) to investigate the key physical-mechanical aspects of major geohazards in order to bridge the current gaps in knowledge and enable a step-change in the current capabilities of risk assessment, prevention, and mitigation; 2) to generate new approaches to predicting geohazards by creating an international, interdisciplinary and intersectoral group which will combine existing knowledge to generate new research methodologies and applications by enabling knowledge exchange among researchers with expertise in complementary research fields; 3) to train several Early Stage Researches (ESRs); 4) to improve the current normative standards and codes ruling geohazard prevention; 5) to provide a competitive edge to European engineering software companies modelling geohazards.
Website	http://www.geohazard.ac.uk/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. The University Of Warwick (UK) Consortium: 2. Georgia Institute Of Technology (US) 3. Institut Polytechnique De Grenoble (FR) 4. Itasca Consultants (FR) 5. Itasca Consulting Ltd (UK) 6. Tongji University (CN) 7. Universidad Mayor De San Simon (BO) 8. Universidad Nacional De San Juan (AR) 9. Universitaet Fuer Bodenkultur Wien (AT) 10. Universitat Politecnica De Catalunya (ES)

SUBITOP	
Title	Understanding subduction zone topography through modelling of coupled shallow and deep processes (SUBITOP)
Contract details	Excellent Science Call: H2020-MSCA-ITN-2015 Topic code: MSCA-ITN-2015-ETN March 2016 / March 2020 - EUR: 3.910.105,80 REA - 674899
Abstract	The SUBITOP ETN is a framework for training and career development of young researchers in Geodynamics, Geophysics, Geology and Geomorphology. It has a scientific focus on the dynamics of continental margins where tectonic plates are recycled through subduction. The Training Network will imbue 15 young scientists with the ability to address the links between the geological processes within subduction zones and the processes that impact the Earth's surface above, using a comprehensive range of modelling and observation techniques and exploiting the full diversity of active and ancient subduction systems within Europe. This experience-based training is centred on PhD projects, covering a spectrum of topics from the deep mechanics of subduction zones to the erosion of their uplifted topography.
Website	http://www.subitop.eu/home/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Helmholtz Zentrum Potsdam Deutschesgeoforschungszentrum Gfz (DE) Consortium: 2. Agencia Estatal Consejo Superior Deinvestigaciones Cientificas (ES) 3. Eidgenoessische Technische Hochschule Zuerich (CH) 4. The University Of Edinburgh UK) 5. Universita Degli Studi Roma Tre (IT) 6. Universite De Montpellier (FR) 7. Universite De Rennes I (FR) 8. Universiteit Utrecht (NL) 9. Universitetet I Oslo (NO)

1.3.2 Volcanic risks

Risk assessment and management related to volcanic eruptions are closely related to observation capacities which space services can offer. As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Volcanic risks	APhoRISM CHRONOS EVOSS FUTUREVOLC MED-SUV MIAVITA VUELCO

These projects have been complemented by the following H2020 projects:

FEVER	
Title	Forecasting the recurrence rate of volcanic eruptions (FEVER)
Contract details	Excellent Science Call: ERC-2015-STG Topic code: ERC-StG-2015 April 2016 / April 2021 - EUR: 1.458.192,00 ERCEA - 677493
Abstract	The target of FEVER is to produce a physically based statistical model able to Forecast the recurrence rate of Volcanic Eruptions both at regional and global scale. This project builds on two main directions of research: 1) Thermo-mechanical and statistical modelling targeting the identification of the main physical factors controlling the recurrence rate of volcanic eruptions and 2) we developed a novel method to determine such magma fluxes. The high-gain target of FEVER is to mitigate the impact of volcanic eruptions on our society, by producing research of interest for governmental agencies dealing with location of strategic infrastructures, and for businesses such as aviation.
Website	https://www.unige.ch/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Universite De Geneve (CH)

VOLCAPSE	
Title	Volcano dome growth, collapse and coupled processes (VOLCAPSE) ***This project also corresponds to the category 'Earth-surface ground deformations'.***
Contract details	Excellent Science Call: ERC-2014-CoG Topic code: ERC-CoG-2014 September 2015 / September 2020 - EUR: 1.955.355,00 ERCEA - 646858
Abstract	In VolCapse, small scale displacements (<1 m/yr) at dome building volcanoes will be quantified by new generation satellite radar data. Larger scale displacements (>.1 m/yr) will be determined by time-lapse camera arrays that allow the visual recording of volcano summits from different viewing geometries, together with photogrammetric and image correlation approaches. This displacement data will enable development of statistical and numerical models to investigate (1) how dome displacements affect the further magma extrusion position, (2) how large morphology changes in the volcano summit affect dome growth by topographic loading or unloading, (3) how dome growth is affected by extrinsic triggers such as tectonic quakes, and (4) how simultaneous displacement processes interfere.
Website	http://www.volcapse.de/welcome/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Helmholtz Zentrum Potsdam Deutschesgeoforschungszentrum Gfz (DE)

1.3.3 Seismic and earthquake risks

Seismic risks and related research on prevention, scenario building etc. have been subject to a wide range of research projects funded by various programmes, in particular the FP7 Environment programme. As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Seismic and earthquake risks	BLACKSEAHAZNET ICARUS MARSITE NERA NIKER PERPETUATE PRE-EARTHQUAKES REAKT SEISMIC SGL FOR USAR SHARE SYNER-G TCAINMAND

These projects have been complemented by the following H2020 projects:

EQRESFRAME	
Title	Earthquake-resilient self-centering steel frame (EQRESFRAME)
Contract details	Excellent Science Call: H2020-MSCA-IF-2014 Topic code: MSCA-IF-2014-EF September 2015 / September 2017 - EUR: 183.454,80 REA - 654426
Abstract	This project aims to couple, for the first time, self-centring systems and modern seismic energy dissipation systems with the goal of developing a novel earthquake-resilient steel frame. The optimal combined design of the self-centering and energy dissipation mechanisms will lead to a steel frame with superior minimal-damage seismic performance.
Website	https://warwick.ac.uk/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. The University Of Warwick (UK)

PARTNER	
Title	Probabilistic Assessment of Reduction and Transfer of Natural Earthquake Risk (PARTNER)
Contract details	Excellent Science Call: H2020-MSCA-IF-2015 Topic code: MSCA-IF-2015-EF January 2017 / January 2019 - EUR: 183.454,80 REA - 704679
Abstract	The current proposal presents a compete framework to analyze the effects of resiliency measures on the overall risk of communities by (1) developing novel probabilistic model to characterize local seismic hazard by using site-specific records, (2) characterizing the exposed assets accurately at high resolution, (3) developing seismic vulnerability models consistent with the seismic hazard and (4) calculating probability distributions of seismic-performance metrics. Seismic risk-reduction will be achieved through implementation of seismic control devices to structures and risk-transfer is achieved through financing mechanisms, such as catastrophe bonds and other parametric models, used to carry over risk to risk-takers.
Website	http://www.bristol.ac.uk/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. University Of Bristol (UK)

1.3.4 Tsunami risks

Fundamental research on tsunamis has been initiated in several programmes. As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Tsunami risks	URBANWAVES ASTARTE SEISMIC

In Horizon2020, no dedicated research projects or studies have been carried out in the area of tsunami risks.

1.3.5 Landslide risks

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 project is described.

Research sub-category	FP7 projects
Landslide risks	LAMPRE

In Horizon2020, no dedicated research projects or studies have been carried out in the area of landslide risks.

1.3.6 Earth-surface ground deformations

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Earth-surface ground deformations	DORIS MELINA SEMEP SENSUM SUBCOAST

In Horizon2020, no dedicated research projects or studies have been carried out in the area of earth-surface ground deformations.

2. Health threats

The Decision 1082/2013 requires sharing best practice and experience in response planning among the Member States, and the establishment of early warning and response system (EWRS) for alerting, assessing public health risks and determining the measures that may be required to protect public health in consideration of relevant information. Besides, the CBRN Action Plan promotes strengthening sharing medical counter-measures across borders in the case of an incident. Recommendations also concern ways in which medical staff and other first responders can receive guidance on dealing with large scale CBRN emergencies and a rapid increase of the number of victims. Various projects support these goals:

2.1 Victims triage

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Victims triage	BIO-PROTECT BOOSTER FASTID MIRACLE MULTIBIODOSE

In Horizon2020, dedicated research projects has started in the area of victims triage in case of a CBRN incident (see section 5.7).

2.2 Contagions, pandemics

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Contagions, pandemics	ANTIBOTABE BIO-PROTECT CONCORDE EQUATOX IMPRESS PANDHUB PULSE S-HELP

These projects have been complemented by the following H2020 projects:

PANDEM	
Title	Pandemic Risk and Emergency Management (PANDEM)
Contract details	H2020 Secure Societies Call: H2020-DRS-2014 Topic code: DRS-04-2014 September 2015 / April 2017 - EUR: 1,277,307.50 REA - 652868
Abstract	PANDEM will contribute to the reduction in the health, socio-economic and security consequences of future pandemics so that society will be better prepared at regional, national, EU and global level. PANDEM will assess current pandemic preparedness and response tools, systems and practice at national, EU and global level in priority areas including risk assessment and surveillance, communication and public information, governance and legal frameworks. PANDEM will then identify gaps and improvement needs leading to the development of viable innovative concepts and analysis of the feasibility of a future demonstration project to strengthen capacity-building for pandemic risk management in the EU.
Website	http://www.pandem.eu.com/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. National University of Ireland, Galway (IE) Consortium: 2. Folkhalsomyndigheten (SE) 3. IGS Strategic Communications Limited (UK) 4. London School of Hygiene and Tropical Medicine (UK) 5. Totalforsvarets Forskningsinstitut (SE) 6. Universite Catholique de Louvain (BE) 7. World Health Organization (CH)

COMPARE	
Title	COllaborative Management Platform for detection and Analyses of (Re-) emerging and foodborne outbreaks in Europe (COMPARE)
Contract details	Health, demographic change and wellbeing Call: H2020-PHC-2014-single-stage Topic code: PHC-07-2014 December 2014 / December 2019 - EUR: 20.817.771,00 RTD - 643476
Abstract	COMPARE will establish a "One serves all" analytical framework and data exchange platform that will allow real time analysis and interpretation of sequence-based pathogen data in combination with associated data in an integrated inter-sectorial, interdisciplinary, international, "one health" approach. The framework will link research, clinical and public health organisations active in human health, animal health, and food safety in Europe and beyond, to develop (1) integrated risk assessment and risk based collection of samples and data, (2) harmonised workflows for generating comparable sequence and associated data, (3) state-of-the-art analytical workflows and tools for generating actionable information for support of patient diagnosis, treatment, outbreak detection and -investigation and (4) risk communication tools. The analytical workflows will be linked to a flexible, scalable and open-source data- and information platform supporting rapid sharing, interrogation and analysis of sequence-based pathogen data in combination with other associated data.
Website	http://www.compare-europe.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Danmarks Tekniske Universitet (DK) Consortium: 2. Academisch Medisch Centrum Bij De Universiteit Van Amsterdam (NL) 3. Agence Nationale De La Securite Sanitaire De L Alimentation De l'Environnement Et Du Travail (FR) 4. Alma Mater Studiorum - Universita Di Bologna (IT) 5. Aristotelio Panepistimio Thessalonikis (EL) 6. Artemis One Health Research BV (NL) 7. Civic Consulting Alleweldt & Kara Gbr (DE) 8. Erasmus Universitair Medisch Centrum Rotterdam (NL) 9. Erasmus Universiteit Rotterdam (NL) 10. European Molecular Biology Laboratory (DE) 11. Fondation Merieux (FR) 12. Friedrich Loeffler Institut - Bundesforschungsinstitut Fuer Tiergesundheit (DE) 13. Genome Research Limited (UK) 14. Institut Francais De Recherche Pour L'exploitation De La Mer (FR) 15. Istituto Superiore Di Sanita (IT) 16. Leibniz-Institut Dsmz-Deutsche Sammlung Von Mikroorganismen Und Zellkulturen GMBH (DE) 17. Magyar Tudomanyos Akademia Wigner Fizikai Kutatokozpont (HU) 18. Responsible Technology (FR) 19. Rijksinstituut Voor Volksgezondheid En Milieu (NL) 20. Robert Koch-Institut (DE) 21. Statens Serum Institut (DK) 22. Stiftung Tieraerztliche Hochschule Hannover (DE) 23. The Australian National University (AU) 24. The Chancellor, Masters And Scholars Of The University Of Cambridge (UK) 25. The Secretary Of State For Environment, Food And Rural Affairs (UK) 26. The University Of Edinburgh (UK) 27. Universidad De Castilla - La Mancha (ES) 28. Universitaetsklinikum Bonn (DE) 29. Universiteit Antwerpen (BE)

2.3 Medical Responses

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Medical Responses	CONCORDE f IMPRESS NMFRDISASTER PULSE S-HELP

These projects have been complemented by the following H2020 projects:

INNOPROCITI	
Title	Innovative enzymes to protect citizens and critical infrastructures (INNOPROCITI)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2015 Topic code: DRS-17-2015-1 September 2015 / March 2016 - EUR: 50,000.00 EASME - 684759
Abstract	The main objective of the INNOPROCITI proposal is the set up of a business plan for the development and selling of (a) products: enzyme formulations for biosensing and decontamination /detoxification of nerve agents and (b) solutions: an integrated platform of decontamination and biosensing systems with procedures of fast assistance.
Website	http://www.detoxizymes.com/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Detoxizymes SRLS (IT)

Q4HEALTH	
Title	Quality of Service and prioritisation for emergency services in the LTE RAN stack (Q4HEALTH) ***This project also corresponds to the category 'Communication systems/response coordination first responders'.***
Contract details	Leadership in enabling and industrial technologies Call: H2020-ICT-2015 Topic code: ICT-12-2015 January 2016 / January 2018 - EUR: 728.176,00 CNECT - 688624
Abstract	Q4HEALTH project is an innovation action focused on the optimization of real time video for emergency services over LTE. The project is implemented as a set of experiments conducted over the FIRE platforms PerformLTE and OpenAirInterface. To achieve this goal six different experiments will be performed focused on resolving a set of six challenges. These challenges will be approached from different perspectives, the applications that will be extended to provide information regarding the type of traffic as well as their traffic requirements to the EPC and the scheduler in the RAN; the radio access where different scheduling strategies will be explored for emergency video; and the core network where mechanism to perform QoS reservation, techniques for seamless mobility between heterogeneous access technologies and SDN techniques to improve communication will be studied.
Website	http://www.redzinc.net/team/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Redzinc Services Limited (IE) Consortium: 2. Eurecom (FR) 3. Universidad De Malaga (ES)

2.4 Digital security in Health Services

No project has been funded in the 2014-2015 call in this area.

3. Food safety and security

3.1 Food safety

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 project is described.

Research sub-category	FP7 projects
Food safety	PLANTFOODSEC

These projects have been complemented by the following H2020 projects:

AUTHENT-NET	
Title	Food Authenticity Research Network (AUTHENT-NET)
Contract details	Food Security, Sustainable Agriculture & Forestry, Marine, Maritime & Inland Water Research & the Bioeconomy Call: H2020-SFS-2015-1 Topic code: SFS-14b-2015 April 2016 / April 2018 - EUR: 499.533,75 REA - 696371
Abstract	AUTHENT-NET will:1) Bring together relevant MS R&D budget holders to coordinate inter-disciplinary research effort and build a cohesive and sustainable network 2) Undertake stocktaking of existing national research and assess against the international landscape 3) Establish transnational mechanisms and instruments for collating and exchanging information on food authenticity research 4) Develop a high level research and innovation strategy for transnational research and a rationale for a potential ERANET on food authenticity. Expectected impacts: improved coordination and communication between relevant MS research budget holders; enhanced cognisance of existing national research; joint strategy for food fraud R&D; agreed priorities and capability to deliver transnational European research on food fraud.
Website	http://www.authent-net.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Fera Science Limited (UK) Consortium: 2. Agencia Estatal Consejo Superior Deinvestigaciones Cientificas (ES) 3. Alma Mater Studiorum - Universita Di Bologna (IT) 4. Centre De Cooperation Internationale En Recherche Agronomique Pour Ledeveloppement - C.I.R.A.D. Epic (FR) 5. Centre Wallon De Recherches Agronomiques (BE) 6. Food And Agriculture Organization Of The United Nations Fao (IT) 7. Food Safety Authority Of Ireland (IE) 8. Instituto Nacional De Investigacion Y Tecnologia Agraria y Alimentaria (ES) 9. Istituto Zooprofilattico Sperimentale Del Piemonte Liguria E Valle D'aosta (IT) 10. Matis Ohf (IS) 11. Michigan State University (US) 12. Ministere De L'economie, Des Finances Et De L'industrie (FR) 13. Ministerie Van Economische Zaken (NL) 14. Nofima AS (NO) 15. Stichting VU (NL) 16. Stichting Wgeningen Research (NL) 17. The Queen's University Of Belfast (UK) 18. The Secretary Of State For Environment, Food And Rural Affairs (UK) 19. Vysoka Skola Chemicko-Technologicka V Praze (CZ)

EuroMix	
Title	EuroMix (EuroMix)
Contract details	Food Security, Sustainable Agriculture & Forestry, Marine, Maritime & Inland Water Research & the Bioeconomy Call: H2020-SFS-2014-2 Topic code: SFS-12-2014 May 2015 / May 2019 - EUR: 7.999.097,00 REA - 633172
Abstract	The aim is to develop a strategy for the risk assessment of mixtures of multiple chemicals derived from multiple sources across different life stages; provide a sound scientific basis for managing risks to public health from chemical mixtures, ultimately reducing use of laboratory animals; and support the global discussion of risk assessment policies for mixtures. The approach takes account of the gender dimension and balances the risk of chemicals present in foods against the benefits of those foods. Important concepts are prioritisation criteria for chemicals based on their exposure and hazard characteristics. New hazard and exposure models will be embedded in a model toolbox, made available for stakeholders through an openly accessible web-based platform.
Website	https://www.euromixproject.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Rijksinstituut Voor Volksgezondheid En Milieu (NL) Consortium: 2. Agence Nationale De La Securite Sanitaire De L Alimentation De L'Environnement Et Du Travail (FR) 3. Benaki Phytopathological Institute (EL) 4. Bundesinstitut Fuer Risikobewertung (DE) 5. Danmarks Tekniske Universitet (DK) 6. Eidgenoessische Technische Hochschule Zuerich (CH) 7. European Fresh Produce Association Aisbl (BE) 8. Folkehelseinstituttet (NO) 9. Fundacao Universidade De Brasilia (BR) 10. Health And Safety Executive (UK) 11. Imperial College Of Science Technology And Medicine (UK) 12. Institut National De La Recherche Agronomique (FR) 13. Institut National De L Environnement Et Des Risques Ineris (FR) 14. Karolinska Institutet (SE) 15. Matis Ohf (IS) 16. Ministry Of Health Of The Republic Of Cyprus (CY) 17. Nacionalni Institut Za Javno Zdravje (SL) 18. Statni Zdravotni Ustav (CZ) 19. Stichting Wageningen Research (NL) 20. The Secretary Of State For Environment, Food And Rural Affairs (UK) 21. Universita Degli Studi Di Milano (IT) 22. Universitat Rovira I Virgili (ES) 23. Universiteit Gent (BE) 24. University Of Ottawa (CA) 25. U.S. Environmental Protection Agency – Epa (US) 26. World Health Organization (CH)

POnTE	
Title	Pest Organisms Threatening Europe (POnTE)
Contract details	Food Security, Sustainable Agriculture & Forestry, Marine, Maritime & Inland Water Research & the Bioeconomy Call: H2020-SFS-2014-2 Topic code: SFS-03a-2014 November 2015 / November 2019 - EUR: 6.850.000,00 REA - 635646
Abstract	This proposal focuses to minimize the risk of introduction/impact of emerging pests threatening EU agriculture and forestry. Targeted pests, their vectors and the host response will be explored using innovative approaches (NGS, transcriptomic). Diseases surveillance and epidemiology given by current methods will integrate improved survey protocols and remote sensing. Innovative IPM will include studies of microbiome to develop sustainable solutions in line with the EU plant health legislation. New knowledge gained with POnTE will result in an outcome-based pest prevention and management work plan to: 1) implement area-wide pest risk assessments; 2) prevent the entry and develop surveillance and early detection tools (diagnostic kits, lab-on-chip, new biomarkers); 3) mitigate the spread and reduce the socio-economic impact; 4) IPM based on disease resistance, disease-free seeds, cultural practices and physical environmentally-friendly treatments; 5) support knowledge-based decision-making policies at EU level.
Website	https://www.ponteproject.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Consiglio Nazionale Delle Ricerche (IT) Consortium: 2. Acli Racale Societa Agricola Cooperativa (IT) 3. Agence Nationale De La Securite Sanitaire De L Alimentation De L Environnement Et Du Travail (FR) 4. Agencia Estatal Consejo Superior Deinvestigaciones Cientificas (ES) 5. Agricola Villena Cooperativa Valenciana (ES) 6. Agritest Srl (IT) 7. A L Tozer Ltd (UK) 8. Aurea Imaging Bvba (BE) 9. Bundesforschungs-Und Ausbildungszentrum Für Wald, Naturgefahren Und Landschaft (AT) 10. Certis Europe B.V. (NL) 11. Faculty Of Agriculture - University Of Belgrade (RS) 12. Forestry Commission Research Agency (UK) 13. Fundacion Citoliva, Centro De Innovacion Y Tecnologia Del Olivar Y Del Aceite (ES) 14. Institut National De La Recherche Agronomique (FR) 15. Instituto Valenciano De Investigaciones Agrarias (ES) 16. Jung Thomas (DE) 17. Loewe Biochemica Gmbh (DE) 18. Luonnonvarakeskus (FI) 19. Norwegian Institute Of Bioeconomy Research – Nibio (NO) 20. Scottish Government (UK) 21. The Agricultural Research Organisation Of Israel - The Volcani Centre (IL) 22. Universidad De Costa Rica (CR) 23. Universita Degli Studi Di Bari Aldo Moro (IT) 24. Vilmorin (FR) 25. Wageningen University (NL)

3.2 Supply chain

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Supply chain	SNIFFER 2 SPICED

These projects have been complemented by the following H2020 projects:

MycoKey	
Title	Integrated and innovative key actions for mycotoxin management in the food and feed chain (MycoKey)
Contract details	Food Security, Sustainable Agriculture & Forestry, Marine, Maritime & Inland Water Research & the Bioeconomy Call: H2020-SFS-2015-2 Topic code: SFS-13-2015 April 2016 / April 2020 - EUR: 5.000.000,00 REA - 678781
Abstract	MycoKey aims to generate innovative and integrated solutions that will support stakeholders in effective and sustainable mycotoxin management along food and feed chains. The project will contribute to reduce mycotoxin contamination mainly in Europe and China, where frequent and severe mycotoxin contaminations occur in crops, and where international trade of commodities and contaminated batches are increasing. MycoKey will address the major affected crops maize, wheat and barley, their associated toxigenic fungi and related mycotoxins. The focus of Mycokey will be: 1) innovating communications of mycotoxin management by applying ICT, providing input for legislation, enhancing knowledge and networks; 2) selecting and improving a range of tools for mycotoxin monitoring; 3) assessing the use of reliable solutions, sustainable compounds/green technologies in prevention, intervention and remediation.
Website	http://www.mycokey.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Consiglio Nazionale Delle Ricerche (IT) Consortium: 2. Anhui Agricultural University (CN) 3. Austep-Austeam Environmental Protection Spa (IT) 4. Boortmalt Nv (BE 5. Buhler Ag (CH) 6. Chinese Academy Of Agricultural Sciences (CN) 7. Confederation Europeenne De La Production De Mais (FR) 8. Eidgenoessisches Departement Fuer Wirtschaft, Bildung Und Forschung (CH) 9. Faculty Of Agriculture - University Of Belgrade (RS) 10. Huazhong Agricultural University (CN) 11. Hubei Provincial Academy Of Agriculture (CN) 12. Institute Of Medicinal Plant Development , Chinese Academy Of Medical Sciences (CN) 13. Institute Of Plant Protection Chinese Academy Of Agriculture Sciences (CN) 14. Institutul National De Cercetare-Dezvoltare Pentru Bioresurse Alimentare (RO) 15. International Institute Of Tropical Agriculture (NG) 16. Jiangsu Academy Of Agricultural Sciences*Jaas (CN)

MyToolBox	
Title	Safe Food and Feed through an Integrated ToolBox for Mycotoxin Management (MyToolBox)
Contract details	Food Security, Sustainable Agriculture & Forestry, Marine, Maritime & Inland Water Research & the Bioeconomy Call: H2020-SFS-2015-2 Topic code: SFS-13-2015 March 2016 / March 2020 - EUR: 4.997.660,75 REA - 678012
Abstract	MyToolBox mobilises a multi-actor partnership (academia, farmers, technology SMEs, food industry and policy stakeholders) to develop novel interventions aimed at achieving a 20-90% reduction in crop losses due to fungal and mycotoxin contamination. A major component of MyToolBox is to provide the recommended measures to the end users along the food and feed chain in a web-based Toolbox. Research into post-harvest measures including real-time monitoring during storage, innovative sorting of crops using vision-technology and novel milling technology will enable cereals with higher mycotoxin levels to be processed without breaching regulatory limits in finished products. Research into the effects of baking on mycotoxin levels will provide better understanding of process factors used in mycotoxin risk assessment.
Website	https://www.mytoolbox.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Universitaet Fuer Bodenkultur Wien (AT) Consortium: 2. Academy Of State Administration Ofgrain (CN) 3. Agro Lv Limited (UA) 4. Axeb Biothech Sl (ES) 5. Barilla G. E R. Fratelli Spa (IT) 6. Biomin Holding Gmbh (AT) 7. Bundesinstitut Fuer Risikobewertung (DE) 8. Cranfield University (UK) 9. Drustvo Sa Ogranicenom Odgovornoscuagrocentrum Za Proizvodnju Prometi Poslovne Usluge (RS) 10. Feed Research Institute Chinese Academy Of Agricultural Sciences (CN) 11. Foodlife International Bilimsel Danismanlik Proje Yonetimi Egitim Arastirma Gelistirme Sanayi Ve Ticaretlimited Sirketi (TR) 12. Harper Adams University (UK) 13. Horta Srl (IT) 14. Icc-International Assocation For Cereal Science And Technology (AT) 15. Innovacio I Recerca Industrial I Sostenible Sl (ES) 16. Institute Of Agro-Products Processing Science And Technology, Chinese Academy Of Agricultural Sciences (CN) 17. Norwegian Institute Of Bioeconomy Research – Nibio (NO) 18. Stichting Wageningen Research (NL) 19. Sudzucker Ag (DE) 20. Suleyman Demirel University (TR) 21. Taris Figs Agricultural Sales Cooperatives Unions (TR) 22. Univerzitet U Novom Sadu, Poljoprivredni Fakultet Novi Sad (RS) 23. Wageningen University (NL)

4. Critical infrastructure protection and urban built environment

The **European Programme for Critical Infrastructure Protection** (see section XX) is an all-hazards programme with a broad range of activities and areas related to prevention, preparedness and response. In this respect, risk management is taking stock of existing research and innovation activities conducted notably in the FP7 Environment (including climate change) programme, in particular the Group on Earth Observation (GEO) such as the Supersites Initiative and research on "stress tests" for critical infrastructures. The programme is furthermore enhancing links with management activities undertaken within the Union Civil Protection Mechanism.

4.1 Urban soft targets and Urban critical infrastructures

4.1.1 Screening of persons, bags, vehicles

AIRIMGO	
Title	ADVANCE IRIS RECOGNITION IN MOVE (AIRIMGO)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2014 Topic code: DRS-17-2014-1 July 2015 / December 2015 - EUR 50.000 EASME - 673751
Abstract	Development of a new recognition system covering high throughput screening of people in reasonably real-time, as people approach entrances to buildings or enter public transportation system, to improve the security and speed of recognition, make the process more comfortable for users and more efficient for the management of the building.
Website	http://www.shsconsultores.es/en/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. S.H.S. CONSULTORES SL (ES)

ART	
Title	Feasibility assessment on Alarm Resolution Technology, using X-Ray Echo Methodology (ART)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2014 Topic code: DRS-17-2014-1 June 2015 / October 2015 - EUR 50,000 EASME - 674563
Abstract	Exploitation of novel Alarm Resolution Technology (ART), using novel patented X-Ray Echo Methodology (all-new high-energy x-ray Rayleigh scattering technology) for high-throughput measuring and characterizing of materials and fluids applied to various security domains and applications. Particular emphasis on the air transport domain, with technologies capable of detecting explosives, narcotics and CRBN's solved in Liquid Aerosols & Gels (LAGs).
Website	http://www.entech-scientific.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Entech Scientific BV (NL)

Bio-AX	
Title	A new wearable, cost effective and non-invasive biometric solution for accurate and high throughput screening of people, bags and vehicles (Bio-AX)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2014 Topic code: DRS-17-2014-1 June 2015 / August 2015 - EUR 50,000 EASME - 673969
Abstract	Development of a new wearable, cost-effective and non-invasive biometric solution for accurate and high throughput screening of people, bags and vehicles. Feasibility Study and Business Plan for the transition of the prototype into commercialisation.
Website	http://audaxsecurity.co.uk/bio-ax/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Audax Global Solutions Limited (UK)

HOLOSCAN	
Title	Holographic Scanner for Safe Real-Time High Throughput Screening of People and Their Bags (HOLOSCAN)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2014 Topic code: DRS-17-2014-1 December 2014 / June 2015 - EUR: 50,000.00 EASME - 651272
Abstract	HOLOSCAN aims to provide the first commercial HOLOSCAN security scanning system that will allow true real-time scanning of multiple moving persons and their bags which novelty has been verified. Furthermore, it plans adapt this HOLOSCAN system to client's needs by varying diode panel size and image resolution.
Website	http://www.ideas.no/holoscan.pdf
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Integrated Detector Electronics AS (NO)

SPIDERS	
Title	Synthetic aPerture Interferometric raDiometer for sEcurity in cRitical infraStructures (SPIDERS)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-2-2014 Topic code: DRS-17-2014 October 2015 / October 2017 - EUR: 816,000.00 EASME - 674274
Abstract	SPIDERS aims at developing on the rising markets of PMMW technology for security applications and tackle challenges such as long queues at airports and bulky scanners by a fast 3D scanning system of walking people and detection of hidden objects and materials.
Website	http://www.mc2-technologies.com/rd-project/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Microwave Characterization Center SAS (FR)

4.1.2 Detection of potential CBRN-E threats at urban soft targets / urban critical infrastructures

EXTREMDRON	
Title	Unmanned Aerial Vehicle for protecting soft/critical urban infrastructures, and the general public in extreme environments (EXTREMDRON)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2015 Topic code: DRS-17-2015-1 April 2016 / August 2016 - EUR: 50,000.00 EASME - 717915
Abstract	EXTREMDRON is an aerial monitoring solution. The project focuses on a creating a NexGen UAV for aerial monitoring applications in extreme operating environments. The EXTREMDRON provides a means to monitor and collect data in extreme environments for security agencies to analyze, collect data, identify threats, and means to rapidly respond to life critical situations which ground crews cannot enter an area for safety reasons. The EXTREMDRON also provides industries/government agencies the means to measure dangerous airborne substances at the disaster location, and its dissipation over populated areas.
Website	http://aerdron.com/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Aerdron SL (ES)

4.1.3 Cyber and physical threats to urban critical infrastructures and urban soft targets

CAPTOR	
Title	cAPTor captures Advanced System Threats (CAPTOR)
Contract details	H2020 Secure Societies Call: H2020-ICT-2015 Topic code: DRS-17-2014-1 January 2016 / December 2018 - EUR 1,963,982.50 CNECT - 688110
Abstract	A Eurobarometer 2013 survey found that air pollution is the environmental topic that European citizens worry about most, however citizens' abilities to take action remain limited. Combining the concepts of citizen science, collaborative learning and environmental grassroots activism to leverage the collective intelligence of existing networks of local communities engaged in environmental issues, allowing them to understand reasons and consequences of air pollution; to stimulate debate; to address authorities with scientific, and robust data from citizens' network of monitoring stations; and to transform this discussion into solutions.
Website	https://www.captor-project.eu/en/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Univ. Politecnica de Catalunya (ES) Consortium: 2. Agencia Estatal Consejo Superior de investigaciones Cientificas (ES) 3. Ecologistas en Accion (ES) 4. Fundacio Privada per a la Xarxa Oberta, Lliure i Neutral, Guifi.Net (ES) 5. Global 2000 Umweltschutzorganisation (AT) 6. Legambiente Associazione Onlus (IT) 7. Legambiente Emilia-Romagna (IT) 8. Legambiente Lombardia Onlus (IT) 9. Legambiente Piemonte e Valle D'aosta Onlus (IT) 10. Legambiente Volontariato Veneto (IT) 11. Univ. Blaise Pascal Clermont-Ferrand II (FR) 12. Univ. Clermont Auvergne (FR) 13. Zentrum fur Soziale Innovation Gmbh (AT)

SmartPatch	
Title	Use of a cost effective smart skin sensor system for remote Structural Health Monitoring and post event structural damage assessment in Soft Urban Targets and Critical Infrastructures Protection (SmartPatch)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2014 Topic code: DRS-17-2014-1 July 2014 / January 2015 - EUR: 50,000.00 EASME - 650476
Abstract	SmartPatch aims to do analysis and testing of the Smart Skin Sensor System for remote Structural Health Monitoring in the ambit of remote and real time Post Event Damage Assessment. The project proves the value of the Sensor System in case of a disastrous event causing damage to Soft Urban Targets and Critical Infrastructures.
Website	http://www.smart-patch.com/ http://aerdron.com/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Smartpatch SRLS (IT)

4.2 Critical Infrastructure Sectors

4.2.1 Critical Energy Infrastructure: Electrical Power (Electricity) and Smart Grids, Oil, Gas

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-caegory	FP7 projects
Critical Energy Infrastructure: Electrical Power (Electricity) and Smart Grids, Oil, Gas	AFTER ARGOS EURACOM INSPIRE INSPIRE-INTERNATIONAL SESAME SEGRID SPARKS VIKING

These projects have been complemented by the following H2020 projects:

CYPRES	
Title	CYPRES the ICS and SCADA security companion (CYPRES)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-2-2015 Topic code: DRS-17-2015 September 2015 / March 2018 - EUR: 1,700,094.00 EASME: 684723
Abstract	CYPRES is one of the first products able to protect specifically industrial automation systems. It uses Artificial Intelligence combined with the real condition of the process to detect discrepancies that reveal intrusions or attacks, even as slow or small as a malware can be. CYPRES must be engineered for each type of process. The development comprises design specifications and development of the CYPRES core-product subsequent to a thorough market study followed by a commercial product specific to electricity networks protection, then another for Water and wastewater systems. Cypres is a cost-worthy add-on solution for existing and new SCADA.
Website	http://www.cypres-security.fr/?lang=en
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. FPC Ingenierie (FR) Consortium: 2. Netceler SAS (FR)

E-LOCKS	
Title	Electronic security for OIL/LPG tanks (E-LOCKS) ***This project also corresponds to the category 'Detection, prevention of intruders; Access Control'.***
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2014 Topic code: DRS-17-2014-1 May 2015 / September 2015 - EUR: 50,000.00 EASME - 673413
Abstract	As one of the major issues to be tackled by oil/gas distribution companies is the prevention of the theft and fraud associated with the distribution of their products, the proposal aims to prevent illegal practices and their direct economic consequences with an innovative security solution for oil/LPG tanks: the e-LockS solution. It is an integrated SW and HW architecture system based on two main components: (1) caplock®: cap with the electronic lock integrated to be installed in each tank; (2) e-key®: intelligent key which will be managed from the Oil/LPG distribution management system (assignment of the permission to open a single tank and/or group of tanks).
Website	http://www.wacngo.com/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Wacngo Ltd. (IL)

LineVu	
Title	A novel optical sensor platform for detection and measurement of contaminants in gas pipelines to protect critical infrastructure from disruption and damage (LineVu)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2014 Topic code: DRS-17-2014-1 March 2015 / September 2015 - EUR: 50,000.00 EASME - 663815
Abstract	Liquid contamination in pipelines is a serious issue for safety, security, reliability of supply and commercially for gas supply and transportation companies. Existing technology is designed only to analyse dry gas. The Linevu system introduces a non-intruding vision system at various points in the pipeline in order to determine if a liquid is present in the pipeline, so that the correct course of action can be decided upon before it becomes an urgent safety or security issue. In 2 phases, the project will bring to market a novel pressurised window, containment system and vision system which can confirm the presence of liquid, while not interfering with routine "pigging" maintenance in the pipeline. The system can be retrofitted onto any existing pipelines in the global supply network.
Website	http://www.ima.co.uk/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. International Moisture Analysers Limited (UK)

MONOFFSHORE	
Title	Autonomous Monitoring Unit for Offshore Applications (MONOFFSHORE) ***This project also corresponds to the category 'Remote monitoring and surveillance tools /technologies'***
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2014 Topic code: DRS-17-2014-1 May 2015 / November 2015 - EUR: 50,000.00 EASME - 673106
Abstract	The aim of this project is to develop an autonomous, robust monitoring unit for offshore application that can be used to assess the design life of platforms, mooring lines, and wind industry structures.
Website	http://www.vce-consult.at/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. VCE Vienna Consulting Engineers Zt GMBH (AT)

NANO	
Title	Intelligent Low-Cost Real-Time Nanomagnetooptical Integrity Monitoring and Sensing System for Asset Integrity Management (NANO)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2015 Topic code: SMEInst-13-2016-2017 September 2015 / March 2016 - EUR: 50,000.00 EASME - 684167
Abstract	EQS aims to deliver a highly sensitive real-time remote monitoring tool for intelligent structural integrity monitoring, for the Oil, Gas and Energy markets. This solution, based on nanotechnology, will increase the resilience of critical energy installations and networks, allowing the reduction of human losses, avoiding energy production disruption, minimizing environmental and economic impact and material damage from natural and man-made disasters. Furthermore, it will be possible to obtain real-time detailed qualitative and quantitative information and 3D visualization of the asset's integrity.
Website	http://www.eqs-global.com/en/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. EQS – Servicios de Engenharia Qualidade e Seguranca Lda (PT)

OMIS	
Title	Optical Mid Infrared Spectrometer (OMIS)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2015 Topic code: DRS-17-2015-1 November 2015 / May 2016 - EUR: 50,000.00 EASME - 697593
Abstract	The aim of this project is to develop a robust mobile device to address three main problems faced by Euroepan gas distributors to guarantee the safety of their grid in urban environments: (1) existing gas chromatographs are not mobile (lack of real time data) and costly; (2) small low cost devices deliver imprecise results in terms of temperature compensation and low gas concentration; (3) slow response time which creates a high potential of risk in case of upper scale of concentration. The development of this new technology will enable distributors to protect a critical infrastructure in urban environment to save human lives and should help to decrease gas losses during distribution process which will help to save valuable resources. The results of phase 1 will be to identify potential suppliers of NDIR sensors and other critical components, to solve existing problems like temperature compensation or sensitivity of gas concentration, and explore a business plan and budget and finally to identify more potential clients in both Europe and worldwide.
Website	http://www.tumourtrace.com/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Huberg Sas – Huber Guenther & C (IT)

ReCETT	
Title	Remote Control of Electrical Transmission Tower (ReCETT)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2015 Topic code: DRS-17-2015-1 April 2016 / October 2016 - EUR: 50,000.00 EASME - 718493
Abstract	ReCETT is a small, automatic and autonomous, reliable and high precision, low energy consumption and low cost remote monitoring device to settle on transmission towers that measure various parameters as well as its surroundings using "slave" monitoring devices. Data are transmitted in real time to end-users through the cell phone/radio network on various types of devices. So ReCETT, by monitoring unstable towers and their surroundings and real time automatic transmission data, optimize efficiently the maintenance, the stability and the continuity of EU power lines, prevent power shutdown, and even more lead the possibility to create new power lines in all European areas.
Website	http://www.alphageomega.fr/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Alphageomega (FR)

SHEER	
Title	SHale gas Exploration and Exploitation induced Risks (SHEER)
Contract details	Secure, Clean and Efficient Energy Call: H2020-LCE-2014-1 Topic code: LCE-16-2014 May 2015 / May 2018 - EUR: 2.601.720,00 INEA - 640896
Abstract	The objective is to develop best practices for assessing and mitigating the environmental footprint of shale gas exploration and exploitation. The project will develop a probabilistic procedure for assessing short and long-term risks associated with groundwater contamination, air pollution and induced seismicity. Development of methodologies and procedures to track and model fracture evolution around shale gas exploitation sites and a robust statistically based, multi-parameter methodology to assess environmental impacts and risks across the operational lifecycle of shale gas.
Website	http://www.sheerproject.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Amra - Analisi E Monitoraggio Del Rischio Ambientale Scarl (IT) Consortium: 2. Helmholtz Zentrum Potsdam Deutschesgeoforschungszentrum Gfz (DE) 3. Instytut Geofizyki Polskiej Akademii Nauk (PL) 4. Koninklijk Nederlands Meteorologisch Instituut-KNMI (NL) 5. Rskw Ltd (UK) 6. Universita Degli Studi Di Napoli Federico Ii. (IT) 7. University Of Glasgow (UK) 8. University Of Keele (UK) 9. University Of Wyoming (US)

SUCCESS	
Title	Securing Critical Energy Infrastructures (SUCCESS)
Contract details	H2020 Secure Societies Call: H2020-DRS-2015 Topic code: DRS-12-2015 May 2016 / November 2018 - EUR: 4,999,946.25 REA - 700416
Abstract	The SUCCESS project will develop an overarching approach to threat and countermeasure analysis with special focus on the vulnerabilities introduced by Smart Meters. SUCCESS will provide concrete guidelines to support the design of energy systems and linked communications networks to guide short, medium and long term initiatives.
Website	http://success-energy.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Ericsson Gmbh (DE) Consortium: 2. Asm Terni Spa (IT) 3. Centrul Roman al Energiei – Cre (RO) 4. Dnv Gl Netherlands B.V. (NL) 5. Ecro Srl (RO) 6. Engineering - Ingegneria Informatica Spa (IT) 7. Esb Networks Ltd (IE) 8. Istituto Superiore Mario Boella Sulle Tecnologie Dell'informazione e Delle Telecomunicazioni Associazione (IT) 9. Kema Nederland Bv (NL) 10. Kungliga Tekniska Hoegskolan (SE) 11. Oy L M Ericsson Ab (FI) 12. P3 Communications Gmbh (DE) 13. P3 Energy & Storage Gmbh (DE) 14. Rheinisch-Westfaelische Technische Hochschule Aachen (DE) 15. Societatea Energetica Electrica Sa (RO) 16. Synelixis Lyseis Pliroforikis Automatismou & Tilepikoinonion Monoprosopi Epe (EL) 17. Tw - Teamware Srl (IT) 18. Vrije Universiteit Brussel (BE)

TM Field Analyzer	
Title	Developing a monitoring system for urban gas pipelines by utilizing state of the art accelerometers, advanced signal processing, and advanced intelligent algorithm based recognition (TM Field Analyzer)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2014 Topic code: DRS-17-2014-1 October 2014 / March 2015 - EUR: 50,000.00 EASME - 651414
Abstract	THE Systems developed a system through which it will be possible for grid operators to continuously detect and isolate faults in urban gas networks in an economically feasible manner. The broader impact will be an increase in urban gas grid safety, and at least a 50% reduction in respective grid maintenance costs.
Website	http://www.the-systems.com/tms-analyzer/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. THE Systems OU (EE)

SCISSOR	
Title	Security In trusted SCADA and smart-grids (SCISSOR)
Contract details	Leadership in enabling and industrial technologies Call: H2020-ICT-2014-1 Topic code: ICT-32-2014 January 2015 / January 2018 - EUR: 3.534.850,00 CNECT - 644425
Abstract	SCISSOR designs a new generation SCADA security monitoring framework, comprising four layers: i) a monitoring layer supporting traffic probes providing programmable traffic analyses up to layer, new ultra low cost/energy pervasive sensing technologies, system and software integrity verification, and smart camera surveillance solutions for automatic detection and object classification; ii) a control and coordination layer adaptively orchestrating remote probes/sensors, iii) a decision and analysis layer in the form of an innovative SIEM fed by both highly heterogeneous monitoring events as well as the native control processes' signals, and supporting advanced correlation and detection methodologies; iv) a human-machine layer devised to present in real time the system behavior to the human end user in a simple and usable manner. SCISSOR's framework will leverage easy-to-deploy cloud-based development and integration, and will be designed with resilience and reliability in mind. SCISSOR will be assessed via i) an off-field SCADA platform and ii) an on-field, real world deployment within a running operational smart grid, to showcase usability, viability and deployability.
Website	https://scissor-project.com/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Assystem Engineering And Operation Services (FR) Consortium: 2. Akademia Gorniczo-Hutnicza Im. Stanislawa Staszica W Krakowie (PL) 3. Consorzio Nazionale Interuniversitario Per Le Telecomunicazioni (IT) 4. Katholieke Universiteit Leuven (BE) 5. Radio6ensesrl (IT) 6. Salzburg Research Forschungsgesellschaft M.B.H. (AT) 7. Sea Società Elettrica Di Favignana Spa (IT) 8. Sixsq Sarl (CH) 9. Universite Pierre Et Marie Curie - Paris 6 (FR)

4.2.2 Critical Transport / Transportation Infrastructure

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Critical Transport / Transportation Infrastructure	CONSORTIS DEMASST ISTIMES PROTECTRAIL SECRET SECUR-ED SERON STAR-TRANS

These projects have been complemented by the following H2020 projects:

SENSKIN	
Title	' SENsing SKIN' for Monitoring-Based Maintenance of the Transport Infrastructure (SENSKIN)
Contract details	Smart, Green and Integrated Transport Call: H2020-MG-2014_TwoStages Topic code: MG-8.1a-2014 June 2015 / December 2018 - EUR: 3.883.041,63 INEA - 635844
Abstract	SENSKIN aims to: (1) develop a dielectric-elastomer and micro-electronics-based skin-like sensing solution for the structural monitoring of the transport infrastructure that will offer spatial sensing of reversible (repeated) strains that requires little power to operate, is easy to install on an irregular surface, is low cost compared to existing sensors, allows simple signal processing and includes the ability of self-monitoring and self-reporting.(2) use the new and emerging technology of Delay Tolerant Network to secure that strain measurements acquired through the 'sensing skin' will reach the base station even under extreme environmental conditions and natural disaster events such as, high winds or an earthquake, where some communication networks could become inoperable. (3) develop a Decision-Support-System for proactive condition-based structural intervention under operating loads and intervention after extreme events. It will be based on an accurate structural assessment based on input from the strain sensors in (a) above and will examine the life-cycle economic, social and environmental implications of the feasible rehabilitation options and the resilience of the infrastructure to future changes in traffic demand that these options offer.(d) implement the above in the case of bridges and test, refine, evaluate and benchmark the monitoring system (integrated a and b) and package (integrated a, b and c) on actual bridges.
Website	http://www.senskin.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Institute Of Communication And Computer Systems (EL) Consortium: 2. Democritus University Of Thrace (EL) 3. Egnatia Odos Ae (EL) 4. Forum Des Laboratoires Nationaux Europeens De Recherche Routiere (BE) 5. Instytut Badawczy Drog I Mostow (PL) 6. Karayollari Genel Mudurlugu (TR) 7. Mistras Group Hellas Anonymos Biomichaniki Kai Emporiki Etaireia (EL) 8. Risa Sicherheitsanalysen Gmbh (DE) 9. State Enterprise State Road Scientific Research Institute Named After M. P. Shulgin (UA) 10. T.E.C.N.I.C. Tecniche E Consulenzenell'ingegneria Civile-Consulting Engineers-Spa (IT) 11. Teletronic Rossendorf Gmbh (DE) 12. Trl Limited (UK) 13. Universitaet Potsdam (DE) 14. Universitaet Stuttgart (DE)

Tunnelsafe2020	
Title	Road and rail tunnel fire protection (Tunnelsafe2020)
Contract details	Innovation in Industry, Transport Call: H2020-SMEINST-1-2014 Topic code: IT-1-2014-1 March 2015 / June 2015 - EUR: 50.000,00 EASME - 662659
Abstract	The purpose of the project is a detailed feasibility study, to plan and engineer the test programme of an extinguishing solution that can extinguish fire anywhere inside tunnels, with a focus on rail and road tunnels. The project will define acceptance criteria with the customer, and search for consortium partners needed to supply the complete system package needed in this market.
Website	http://www.fire-eater.com/en/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Fire Eater As (DK)

4.2.3 Critical Water Infrastructure

Tunnelsafe2020	
Title	Road and rail tunnel fire protection (Tunnelsafe2020)
Contract details	Innovation in Industry, Transport Call: H2020-SMEINST-1-2014 Topic code: IT-1-2014-1 March 2015 / June 2015 - EUR: 50.000,00 EASME - 662659
Abstract	Novel technology for automated and remote controlled valves in public networks, such as water, gas or district heating in order to protect vital urban infrastructure against unauthorized access. This technology to be brought to market following this phase 1 feasibility study addresses the public urban piping systems, e.g. for water, gas or district heating, which are today almost fully mechanical, manually controlled and extremely vulnerable with respect to criminal interventions or terroristic attacks ore of the innovation is a patented rotationally locked support plate ('System Berliner Kappe'), which enables retrofitting of automated actuators (optimized for low energy consumption and can operate fully decentralized powered by batteries) in already existing valves without flanging and without a manhole. The entire system is controlled by safety-approved wireless communication systems.
Website	http://www.3s-antriebe.de/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. 3S ANTRIEBE GMBH (DE)

SEGU	
Title	SEwer inventory system to safeGUard waste water infrastructures (SEGU)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2015 Topic code: DRS-17-2015-1 January 2016/ July 2016 - EUR: 50,000.00 EASME - 718785
Abstract	SEGU offers a solution to the European challenges in waste water management by allowing for accurate digital 3D data that can be obtained 4 times faster, less expensive and safer. Without this information crisis management plans for health threats, floods, collapses or calamities are hard to execute. Plans for water management (scarcity of water resources), next generation emergency services (fire brigades), rainwater drainage challenges (enlarging urban environments) or strategic use of sensor systems to detect gas, drugs or explosives are essential and complex tasks. The aim of the SEGU (SEwer inventory system to safeGUard waste water infrastructures) project is to ensure market introduction of a Waste Water Infrastructure Data Service within EU28 as well as proper management of waste water infrastructure.

SEGU	
Website	https://www.voxdale.be/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Voxdale BVBA (BE)

VIGI-LEAK	
Title	A Smart Technology Trained for Preventing Leakages from Sewer Systems (VIGI-LEAK)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2015 Topic code: DRS-17-2015-1 November 2015 / February 2016 - EUR: 50,000.00 EASME - 697140
Abstract	Development of technology based on an ongoing monitoring plan to anticipate the consequences of sewerage system leakages and the impact on groundwater pollution, with the ambition of reducing the amount of Contaminants of Emerging Concern that can cause harm to the environment and human populations. The development of VIGI-LEAK aims to complement existing technology ("Any Geometry Flume", a system adapted to measure gravitational flows in a simple, precise and relatively inexpensive way) with a highly precise real-time flow measurement software. VIGI-LEAK is a correlation system located in the "internet cloud" to monitor sewage systems and alert if there is a fault or malfunction in some segment, calculating the magnitude of the leakage. It will release sewer operators from being dependant on expensive flow data delivery services providers, representing a powerful tool for engineers and decision makers.
Website	http://www.rz-ee.com/index.php/en/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Roberto Zimmerman Environmental Engineering LTD (IL)

4.2.4 Critical Finance Infrastructure

Loca Credibilia	
Title	Data and document integrity for services provided through critical information infrastructures (Loca Credibilia)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2015 Topic code: DRS-17-2015-1 May 2015 / November 2015 - EUR: 50,000.00 EASME - 684849
Abstract	Loca Credibilia will promote increased security and public trust in the critical financial services infrastructure, assuring document integrity and accountability. Loca Credibilia will further limit trust destroying instances of forgery, fraud and corruption. The system is proved to be an important tool to identify objects and the changes of their relations, status in the course of a legally controlled life cycle. The information management system based on ADNS coding and processes provides information for all participants of the document lifecycle by enabling access to the last valid version.
Website	http://www.locacredibilia.com/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Intersoft-Hungary Kereskedelmi es Szolgaltato Kft (HU)

4.3 Risk assessment and monitoring

4.3.1 Multi-sector cyber and physical threats to critical infrastructures, including ICT

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Multi-sector cyber and physical threats to CI's, including ICT	HIPOW INSPIRE MICIE PRECYSE PROGRESS SECRIT SERENITI SERSCIS SPARKS STRUCTURES VIKING WSAN4CIP

These projects have been complemented by the following H2020 projects:

ATENA	
Title	Advanced Tools to assEss and mitigate the criticality of ICT compoNents and their dependencies over Critical InfrAstructures (ATENA)
Contract details	H2020 Secure Societies Call: H2020-DS-2015-1 Topic code: DS-03-2015 May 2016 / April 2019 - EUR 6,889,925 CNECT – 700581
Abstract	Aim to achieve the desired level of security and resilience of Industrial and Automation Control Systems (IACS) adopted in Critical Infrastructures by exploiting advanced features of ICT algorithms and components and bringing them to operational industrial maturity level. Outputs include a suite of integrated market-ready ICT networked components and advanced tools embedding innovative algorithms both for correct static CI configuration and for fast dynamic CI reaction in presence of adverse events. Outcomes are tailored and validated in selected Use Cases: a Software Defined Security paradigm combining new anomaly detection algorithms and risk assessment methodologies within a distributed environment.
Website	https://www.atena-h2020.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Leonardo - Societa per Azioni (IT) Consortium 2. Agenzia Nazionale per le Nuove Tecnologie, l'energia e lo Sviluppo Economico Sostenibile (IT) 3. Consorzio per la Ricerca nell' Automatica e Nelle Telecomunicazioni C.R.A.T. (IT) 4. Creos Luxembourg SA (LU) 5. Institute of Baltic Studies (EE) 6. ITRUST Consulting SARL (LU) 7. Societe Wallonne des Eaux (BE) 8. Multitel ASBL (BE) 9. Sapienza SL (SE) 10. Israel Electric Corporation Ltd (IL) 11. Univ. de Coimbra (PT) 12. Univ. degli Studi Roma (IT) 13. Univ. du Luxembourg (LU)

CIPSEC	
Title	Enhancing Critical Infrastructure Protection with innovative SECurity framework (CIPSEC)
Contract details	H2020 Secure Societies Call: H2020-DS-2015-1 Topic code: DS-03-2015 May 2016 / April 2019 - EUR 5,258,316.25 REA - 700378
Abstract	The main aim of CIPSEC is to create a unified security framework that orchestrates state-of-the-art heterogeneous security products to offer high levels of protection in IT (information technology) and OT (operational technology) departments of CIs. As part of this framework CIPSEC will offer a complete security ecosystem of additional services that can support the proposed technical solutions to work reliably and at professional quality. These services include vulnerability tests and recommendations, key personnel training courses, public-private partnerships (PPPs) forensics analysis, standardization and protection against cascading effects.
Website	http://www.cipsec.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Atos Spain SA (ES) Consortium: 2. Aegis IT Research Ltd (UK) 3. Atos IT Solutions And Services Iberia SL (ES) 4. Bitdefender SRL (RO) 5. Comsec Limited (IL) 6. Consorzio per il Sistema Informativo (CSI Piemonte) (IT) 7. DB Netz AG (DE) 8. Empelor Gmbh (CH) 9. Foundation for Research and Technology Hellas (EL) 10. Hospital Clinic i Provincial de Barcelona (ES) 11. Panepistimio Patron (EL) 12. Technische Univ. Darmstadt (DE) 13. Univ. Politecnica de Catalunya (ES) 14. Worldsensing Limited (UK)

CITADEL	
Title	Critical Infrastructure Protection using Adaptive MILS (CITADEL)
Contract details	H2020 Secure Societies Call: H2020-DS-2015-1 Topic code: DS-03-2015 June 2016 / May 2019 - EUR 4,812,849.47 REA - 700665
Abstract	CITADEL will provide innovative platform technology, methodology and tools for development, deployment, and certification of adaptive MILS systems for CI, to be demonstrated in three industrial CI use cases. The solution enables robust and resilient CI through monitoring and adaptive self-healing mechanisms that respond to natural and malicious occurrences by intelligently reconfiguring hosts, functions, and networks, while maintaining essential functions and defences. CITADEL will extend the MILS approach by adding dynamic reconfiguration to the MILS platform, and Monitoring and Adaptation Systems enabling resilience to adversity while preserving vital system properties.
Website	http://www.citadel-project.org/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. X/Open Company Limited (UK) Consortium: 2. ATSEC Information Security AB (SE) 3. Centre National de la Recherche Scientifique CNRS (FR) 4. Fondazione Bruno Kessler (IT) 5. Frequentis AG (AT) 6. Ikerlan SCI (ES) 7. Institut Für Angewandte Systemtechnik Bremen Gmbh (DE) 8. J.W. Ostendorf Gmbh & Co. KG (DE) 9. Kaspersky Lab Uk Ltd (UK) 10. OAS Aktiengesellschaft (DE) 11. Sysgo AG (DE) 12. Technische Universiteit Eindhoven (NL) 13. TTTech Computertechnik AG (AT) 14. Unicontrols A.S. (CZ) 15. Universite Grenoble Alpes (FR)

CyberWiz	
Title	Cyber-Security Visualization and CAD-Tool for the Vulnerability Assessment of Critical Infrastructures (CyberWiz)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-2-2014 Topic code: DRS-17-2014 September 2015 / September 2017 - EUR: 1,595,562.50 EASME - 673980
Abstract	The project will deliver and validate a tool that helps to 1) better understand current cyber security levels across complex enterprise-wide architectures, including relationships and interdependencies between systems, 2) prioritize areas to address and cyber security investments to pursue and 3) proactively manage cyber security e.g. when building or modifying architectures. The solution is based on a cybersecurity metamodel that 1) describes the qualitative structure (which assets, attacks and defences that should be included, and how these should be associated) and 2) populates this qualitative structure with quantitative data (how likely different attacks are to succeed given the system parameter values and the presence or absence of different defences, using Bayesian networks). The tool generates a vulnerability "heat map" for each system configuration, allowing a user-friendly and visual comparison of the different alternatives.
Website	https://www.cyberwiz.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Applied Security GMBH (DE) Consortium: 2. Forseeti AB (SE)

DAPS	
Title	Drone Alarm and Protection System (DAPS)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2015 Topic code: DRS-17-2015-1 January 2016 / June 2016 - EUR: 50,000.00 EASME - 719382
Abstract	MyDefence develops an innovative drone alarm and protection system (DAPS) to be used by security services providers and critical infrastructure owners - public and private sectors - in urban contexts. DAPS is a scalable, networked system with hardware and embedded software algorithms coupled to a graphical user interface. DAPS is able to detect and identify illegal drones around secure areas and to jam the device in a specific wireless frequency range without interfering with other mobile signals and forcing a controlled drone landing. Through a feasibility study the technical and economic viability of DAPs will be validated.
Website	http://www.mydefence.dk/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. MYDEFENCE Communication APS (DK)

POLARIS	
Title	Preventative OperationaL procedures for space weAtheR threats to CrItical InfraStructure (POLARIS)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2014 Topic code: DRS-17-2014-1 December 2014 / June 2015 - EUR: 50,000.00 EASME - 651823
Abstract	The scope for this project is to focus on the development of a commercial service to operators of critical infrastructure that provides preventative operational procedures. The operational procedures are based upon threat assessments received from external sources and with a focus on the initial threat detection which shall be incorporated into the service which is based upon Space Weather analysis. POLARIS will provide a single point of contact for the alerting of threats, expert analysis and the issuing of operational procedures tailored to the needs of a particular urban critical infrastructure.
Website	http://www.skytek.com/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Skytek Limited

SAFURE	
Title	SAFety and secURity by design for interconnected mixed-critical cyber-physical systems (SAFURE)
Contract details	Leadership in enabling and industrial technologies Call: H2020-ICT-2014-1 Topic code: ICT-01-2014 February 2015 / February 2018 - EUR: 5.231.375,00 CNECT - 644080
Abstract	SAFURE targets the design of cyber-physical systems by implementing a methodology that ensures safety and security "by construction". The objectives of SAFURE are to (1) implement a holistic approach to safety and security of embedded dependable systems, preventing and detecting potential attacks; (2) to empower designers and developers with analysis methods, development tools and execution capabilities that jointly consider security and safety; (3) to set the ground for the development of SAFURE-compliant mixed-critical embedded products.The results of SAFURE will be (1) a framework with the capability to detect, prevent and protect from security threats on safety, able to monitor from application level down to the hardware level potential attacks to system integrity from time, energy, temperature and data threats; (2) a methodology that supports the joint design of safety and security of embedded systems, assisting the designer and developers with tools and modelling languages extensions; (3) proof-of concept through 3 industrial use cases in automotive and telecommunications; (4) recommendations for extensions of standards to integrate security on safety-critical systems; (5) specifications to design and develop SAFURE-compliant products.
Website	https://safure.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Technikon Forschungs- Und Planungsgesellschaft Mbh (AT) Consortium: 2. Barcelona Supercomputing Center - Centro Nacional De Supercomputacion (ES) 3. Eidgenoessische Technische Hochschule Zuerich (CH) 4. Escrypt Gmbh Embedded Security (DE) 5. Magneti Marelli S.P.A. (IT) 6. Scuola Superiore Di Studi Universitari E Di Perfezionamento Sant'anna (IT) 7. Symtavision Gmbh (DE) 8. Sysgo Ag (DE) 9. Technische Universitat Braunschweig (DE) 10. Thales Communications & Security Sas (FR) 11. Thales Sa (FR) 12. Tttech Computertechnik Ag (AT)

4.3.2 Cascading effects from natural disasters related to critical infrastructures

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 project is described.

Research sub-category	FP7 projects
Cascading effects from natural disasters related to CI's	SERSCIS

In the H2020 2014-2015 calls, no dedicated research projects or studies have been carried out in this area.

4.3.3 Multihazard assessment, stress tests

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Multihazard assessment, stress tests	CIPRNET HIPOW INFRARISK STREST STRUCTURES VIKING

In Horizon2020, no dedicated research projects or studies have been carried out in the area of multihazard assessment and stress tests.

4.3.4 Remote monitoring and surveillance tools / technologies

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Remote monitoring and surveillance tools / technologies	ARENA BASYLIs UAN

These projects have been complemented by the following H2020 projects:

Invest	
Title	INtelligent Video analytics to analyse complex scenes and Enhance Security of critical infrastructure and urban soft Targets (Invest)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2014 Topic code: DRS-17-2014-1 January 2015 / July 2015 - EUR: 50,000.00 EASME - 662822
Abstract	The INVEST project brings to market readiness innovative, disruptive, intelligent video analytics (IVA) technology to create a high performance system for threat detection to protect urban soft targets and critical infrastructure. It tackles a recognised need for advanced, retrofitable systems to enhance CCTV infrastructure performance. It will rapidly identify suspects in large volumes of video data track them in real time across multiple video systems, with reliable re-identification of targets moving between CCTV systems across a city.
Website	https://erncip-project.jrc.ec.europa.eu/networks/tgs/video
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. See Questor Limited

PROTECT-2	
Title	PeRsonnel lOcation and Tracking for safEty of Critical InfrasTructures (PROTECT-2)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2015 Topic code: DRS-17-2015-1 March 2016 / September 2016 - EUR: 50,000.00 EASME - 71077
Abstract	DUNE plans to introduce in the CIP scenario a new personal, autonomous, infrastructure-free, wearable and scalable localisation and tracking system in GPS-denied environments, with a modular structure capable of fulfilling a widespread ensemble of requirements, typical of various CIP applications.
Website	http://www.dune-sistemi.com/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Dune Srl (IT)

ROBIN	
Title	ROBotic security INnovative system (ROBIN)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2014 Topic code: DRS-17-2014-1 July 2015 / January 2016 - EUR: 50,000.00 EASME - 673801
Abstract	The objective of the project is the development of a mobile robot platform able to perform autonomous protection of critical infrastructures. The project will develop a detailed business plan that includes the following specific objectives: market study, strategy and implementation, SWOT analysis, revenue projections, manufacturing feasibility, user involvement, risk assessment, IP management, marketing plan (including distribution and sales channels) and study of the ability to increase profitability of the enterprise through ROBIN innovation.
Website	https://www.robotnik.es/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Robotnik Automation SLL (ES)

SafeSky	
Title	Integrated system for critical infrastructure and personal sphere monitoring and protection against aerial threats (SafeSky)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2014 Topic code: DRS-17-2014-1 July 2015 / November 2015 - EUR: 50,000.00 EASME - 673627
Abstract	The aim of this project is to deliver SAFESKY, dedicated for critical infrastructure and personal sphere monitoring and protection against aerial threat in the light of the increasing amount of drones we encounter nowadays. The SAFESKY system will be delivered in two versions. Its high-end version will be dedicated for protection of critical infrastructures, while its basic deployment, considerably less expensive one, will be dedicated for private persons protection of their personal sphere, e.g. houses.
Website	https://si-research.eu/events/ict-proposers-day-2012/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Bonda. Pl - Spolka Zoo (PL) Consortium: 2. Bioseco Sp Zoo (PL) 3. Sirc Sp Zoo (PL)

SMS	
Title	Safety Micro Sensor (SMS)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2014 Topic code: DRS-17-2014-1 July 2015 / January 2016 - EUR: 50,000.00 EASME - 674434
Abstract	Objective of the Safety MicroSensor (SMS) project is to create a single miniature CBRNE sensor chip of only 3x3mm for the detection of hazardous chemical. This will be done by combining with the chip nanomaterials sensitive to a number Toxic Industrial Chemicals (TIC) and deadly Chemical Warfare Agents (CWA) such Sarin and Tabun. One chip can host up to 12 different sensors and it can connect to up 4 external sensing elements or detectors. The same chip will be interfaced to an external solid state Radiation Detector (i.e. a CZT or CdTe) for the concurrent monitoring of illicit radiation sources. The single chip CBRN-E microsensor is the basis to build easy to install and to operate through continuous monitoring of critical infrastructures or scanning portals of high passage area and for use at occasional crowds gatherings.
Website	https://www.sensichips.com/

SMS	
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Aero Sekur S.p.A. Consortium: 2. SENSICHIPS Srl

Starlight	
Title	Demonstration of a High Definition Low Light Sensor (Starlight) for use in the Surveillance andProtection of Urban Soft Targets and Critical Infrastructures (Starlight)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2014 Topic code: DRS-17-2014-1 June 2015 / December 2015 - EUR: 50,000.00 EASME - 663680
Abstract	Starlight provides a light sensitivesensor that produces high definition images of non-illuminated areas at night and in low light conditions. The aim is to improve sensitivity by using sensors with organic compounds that aresensitive to background sky radiation. This solution will reduce the energy required to illuminate urban soft targets and critical infrastructure. Added benefits includea reduction in light pollution and that surveillance can be carried out in areas which have lighting restrictions.
Website	http://www.overview.co.uk/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Overview Limited (UK)

SURVEIRON	
Title	Advanced surveillance system for the protection of urban soft targets and urban critical infrastructures (SURVEIRON)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-2-2015 Topic code: DRS-17-2015 March 2016 / March 2018 - EUR: 1,735,714.75 EASME - 711264
Abstract	SURVEIRON is an innovative solution for the protection of urban environments and critical infrastructures that provides those in charge of public and private security with an intelligent surveillance and decision making service in critical situations. SURVEIRON constitutes a tool for the prevention and management of potential disasters. The project is based in a set of AEORUMs intelligent robots embedded inside a fleet of unmanned aerial vehicles (UAVs). This fleet is deployed in fixed and mobile locations and supervised from an emergency command center.
Website	https://aeorum.com/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Aeorum Espana SL (ES)

Theseus	
Title	Theseus (Theseus)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2014 Topic code: DRS-17-2014-1 May 2015 / September 2015 EUR: 50,000.00 EASME - 672398
Abstract	Theseus is designed to bring commercial aviation-grade reliability, engineering standards and extreme operation safety into an unmanned air vehicle platform.
Website	http://onaircs.com/it/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. On Air Consulting & Solutions (IT)

UPAC S-100	
Title	Feasibility study for urban protection aviation copter s-100 (UPAC S-100)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2014 Topic code: DRS-17-2014-1 July 2015 / January 2016 - EUR: 50,000.00 EASME - 672428
Abstract	Development of a new unmanned aerial system (UAS) for civil market applications including urban security which will be more cost-effective, reliable and versatile than current solutions. UPAC S-100 will revolutionize disaster relief, protection and surveillance of critical infrastructure and other areas in urban environments, such as :(1) supporting first responders in monitoring disaster areas; (2) instantly creating a temporary mobile phone network in only 30 minutes, dropping leaflets and talking to people via loudspeakers in case of destroyed infrastructure; (3) entering contaminated areas and identifying biological/chemical hazard leaks; (4) fast and flexible response to criminal acts; (5) inspections/ maintenance of critical infrastructures; (6) improving coast guard activities, maritime emergency response and border.
Website	https://schiebel.net/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Schiebel Elektronische Geraete GMBH (AT)

4.3.5 Detection, prevention of intruders; Access Control

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Detection, prevention of intruders; Access Control	CRISALIS IDETECT 4ALL RIBS

These projects have been complemented by the following H2020 projects:

IMPRINT	
Title	Defeat of Insider Theft in Nuclear and Radioactive Sites (IMPRINT)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-2-2015 Topic code: DRS-17-2015 December 2015 / December 2017 - EUR: 1,032,027.00 EASME - 696945
Abstract	The project targets insider threats faced by nuclear security systems and the need to detect shielded and unshielded Special Nuclear Materials ("SNM") and radioactive materials from insider threats. Specifically, the project addresses the need for inspection systems that can penetrate high attenuating vehicles, be specific to nuclear and shielding materials and that can be steal from the sites. Lingacom is developing an innovative Muon Detection System for detecting high-Z materials used in nuclear bombs and shielded radioactive materials in containerized cargo and vehicles to combat insider theft.
Website	http://lingacom.com/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Lingacom Ltd (IL)

OneCard	
Title	Increasing the security of access to urban critical infrastructure with a Near Field Communication micro SD smart card for mobile devices using on-chip state of the art technology (OneCard)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2015 Topic code: DRS-17-2015-1 March 2016 / July 2016 - EUR: 50,000.00 EASME: 719660
Abstract	OneCard is a microSD card that offers a full replacement of the classic NFC smart card for CI access control systems by integrating the NFC antenna and secure elements (SE) into one uSD card. It maintains the memory of the uSD card and offers the highest security for its users. Two SEs in OneCard assure hardware separation of application domains requiring extra safety, therefore it can be used instead of several smart cards.
Website	http://www.r-das.sk/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. R-DAS, s.r.o. (SK)

WARDIAM PERIMETER	
Title	Wardiam perimeter (WARDIAM PERIMETER)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2015 Topic code: DRS-17-2015-1 April 2016 / October 2016 - EUR: 50,000.00 EASME - 717736
Abstract	WARDIAM PERIMETER is oriented to protection and security in infrastructures, able to protect large critical infrastructures through the use of a network of sensors with a disruptive technology called Controlled Magnetic Field (CMF). WARDIAM PERIMETER sensors allow preventive detection, continuous monitoring and discrimination, and are easily camouflaged, and in the case of an event, the cameras can start functioning to show the intruder to the security personnel.
Website	http://www.ontech.es/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Ontech Security SL (ES)

4.4 Resilience

4.4.1 Resilience of urban built environments

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Resilience of urban built environments	BESECURE DESURBS ECOSSIAN ELASSTIC EU-SEC II HARMONISE SPIRIT THE HOUSE VASCO VITRUV

These projects have been complemented by the following H2020 projects:

LIQUEFACT	
Title	Assessment and mitigation of liquefaction potential across Europe: a holistic approach to protect structures / infrastructures for improved resilience to earthquake-induced liquefaction disasters (LIQUEFACT)
Contract details	H2020 Secure Societies Call: H2020-DRS-2015 Topic code: DRS-13-2015 May 2016 / November 2019 - EUR: 4,944,072.50 REA - 700748
Abstract	The LIQUEFACT project addresses the mitigation of risks to EILD events in European communities with a holistic approach. The project not only deals with the resistance of structures to EILD events, but also, the resilience of the collective urban community in relation to their quick recovery from an occurrence. The LIQUEFACT project sets out to achieve a more comprehensive understanding of EILDs, the applications of the mitigation techniques, and the development of more appropriate techniques tailored to each specific scenario, for both Europe and global.
Website	http://www.liquefact.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Anglia Ruskin university Higher Education Corporation (UK) Consortium: 2. Centro Europeo di Formazione e Ricerca in Ingegneria Sismica (IT) 3. Istanbul Universitesi (TR) 4. Insituto Spermentale Modelli Geotechnici Societa a Responsabilita Limitata (IT) 5. Slp Specializirano Podjetje za Temeljenje Objectov, doo, Ljubljana (SL) 6. Stifelsen Norsar (NO) 7. Trevi Societa per Azioni (IT) 8. Universidade do Porto (PT) 9. Universita Degli Studi di Cassino e Del Lazio Meridionale (IT) 10. Universita Degli Studi di Napoli Federico II (IT) 11. Universiza v Ljubljani (SL)

4.4.2 Critical Infrastructure Resilience

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Critical Infrastructure Resilience	COCKPITCI INSPIRE PROGRESS SERENITI SERSCIS

These projects have been complemented by the following H2020 projects:

DARWIN	
Title	Expecting the unexpected and know how to respond (DARWIN)
Contract details	H2020 Secure Societies Call: H2020-DRS-2014 Topic code: DRS-07-2014 June 2015 / June 2018 - EUR: 4,998,896.25 REA - 653289
Abstract	DARWIN will improve response to expected and unexpected crises affecting critical infrastructures and social structures. It addresses the management of both man-made and natural events. The main objective is the development of European resilience management guidelines. These will improve the ability of stakeholders to anticipate, monitor, respond, adapt, learn and evolve, to operate efficiently in the face of crises. The project will adapt innovative tools, test and validate the guidelines, and establish knowledge about how organisations can implement guidelines to improve resilience.Also a Community of Crisis and Resilience Practitioners (CoCRP) will be established, including stakeholders and end-users from other domains and critical infrastructures and resilience experts. The CoCRP will be involved in an iterative evaluation process to provide feedback on the guidelines.
Website	https://h2020darwin.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Stiftelsen Sintef (NO) Consortium: 2. Ben-Gurion University of the Negev (IL) 3. C.C.I.C.C. Limited (IE) 4. Consorzio Sicta Sistemi Innovativiper il Controllo Deltraffico Aereo (IT) 5. Deel Blue SRL (IT) 6. Enav Spa (IT) 7. Instituto Speriore Di Sanita (IT) 8. Ostergotlands Lan (SE) 9. Technische Universitat Braunschweig (DE) 10. Totalforsvarets Forsknigsinstitut (SE)

IMPROVER	
Title	Improved risk evaluation and implementation of resilience concepts to critical infrastructure (IMPROVER)
Contract details	H2020 Secure Societies Call: H2020-DRS-2014 Topic code: DRS-07-2014 June 2015 / June 2018 - EUR: 4,323,978.75 HOME - 653390
Abstract	The overall objective is to improve European critical infrastructure resilience to crises and disasters through the implementation of combinations of societal, organisational and technological resilience concepts to real life examples of pan-European significance, including cross-border examples. This implementation will be enabled through the development of a methodology based on risk evaluation techniques and informed by a review of the positive impact of different resilience concepts on critical infrastructures. The methodology will be cross sectoral and will provide much needed input to standardisation of security of infrastructure.
Website	http://improverproject.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. SP Sveriges Tekniska Forskningsinstitut AB (SE) Consortium: 2. Dansk Brand-og Sikringsteknisk Institut Forening (DK) 3. Euro-Mediterranean Seismological Centre (FR) 4. INOV Inesc Inovacao – Instiuto de Novas Tecnologias (PT) 5. Institut National de l'Environnement et des Riques Ineris (FR) 6. JRC – Joint Research Centre – European commission (BE) 7. SP Fire Research AS (NO) 8. Univ. of Sheffield (UK) 9. Univ. I Tromsoe (NO) 10. University College London (UK) 11. Univ. of Leicester (UK)

RESILENS	
Title	Realising European ReSiliencE for CritIcaL INfraStructure (RESILENS)
Contract details	H2020 Secure Societies Call: H2020-DRS-2014 Topic code: DRS-07-2014 May 2015 / May 2018 - EUR: 4,091,842.50 REA - 653260
Abstract	RESILENS will develop a European Resilience Management Guideline (ERMG) to support the practical application of resilience to all CI sectors. Accompanying the ERMG will be a Resilience Management Matrix and Audit Toolkit which will enable a resilience score to be attached to an individual CI, organisation and at different spatial scales which can then be iteratively used to direct users to resilience measures that will increase their benchmarked future score. The ERMG and accompanying resilience methods will be hosted on an interactive web based platform, the RESILENS Decision Support Platform (RES-DSP). The RES-DSP will also host an e-learning hub that will provide further guidance and training on CI resilience.
Website	http://resilens.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Future Analytics Consulting Limited (IE) Consortium: 2. Bundesanstalt fuer Strassenwesen (DE) 3. Camara Municipal de Lisboa (PT) 4. Eastern and Midland Regional Assembly (IE) 5. EDP Distribuicao Energia SA (PT) 6. Factor Social – Consultoria em Psico – Sociologia e Ambiente LDA (PT) 7. Fraunhofer Gesellschaft zur Foerderung der Angewandten Forschung EV (DE) 8. Irish Water (IE) 9. M T R S 3 Solutions and Services Ltd (IL) 10. Skills for Justice (Enterprises) Limited (UK) 11. The Provost, Fellows, Foundation Scholars & the other Members of Board of the College of the Holy & Undivided Trinity of Quen Elizabeth near Dublin (IE) 12. Univ. of Warwick (UK)

RESOLUTE	
Title	RESilience management guidelines and Operationalization appLied to Urban Transport Environment (RESOLUTE)
Contract details	H2020 Secure Societies Call: H2020-DRS-2014 Topic code: DRS-07-2014 May 2015 / May 2018 - EUR: 3,848,581.00 REA - 653460
Abstract	RESOLUTE proposes to conduct a systematic review and assessment of the resilience assessment and management concepts, as a basis for the deployment of an European Resilience Management Guide (ERMG).The final goal of RESOLUTE is to adapt and adopt the identified concepts and methods from the defined guidelines for their operationalization and evaluation when addressing Critical Infrastructure (CI) of the Urban Transport System (UTS), through the implementation of the RESOLUTE Collaborative Resilience Assessment and Management Support System (CRAMSS), that adopts a highly synergic approach towards the definition of a resilience model for the next-generation of collaborative emergency services and decision making process.
Website	http://www.resolute-eu.org/

RESOLUTE	
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Universita Degli Studi Di Firenze (IT) Consortium: 2. Associacao Para o Desenvolvimento Da Investigacao No Instituto Superior de Gestao (PT) 3. Attiko Metro Ae (EL) 4. Citta Metropolitana Di Firenze (IT) 5. Cofac Cooperativa De Formacao e Animacao Cultural Crl (PT) 6. Comune Di Firenze (IT) 7. Consorzio Milano Ricerche (IT) 8. Ethniko Kentro Erevnas Kai Technologikis Anaptyxis (EL) 9. Fraunhofer Gesellschaft zur Foerderung Der Angewandten Forschung E.V.(DE) 10. Humanist (FR) 11. Swarco Mizar Srl (IT) 12. Thales Italia Spa (IT)

SmartResilience	
Title	Smart Resilience Indicators for Smart Critical Infrastructures (SmartResilience)
Contract details	H2020 Secure Societies Call: H2020-DRS-2015 Topic code: DRS-14-2015 May 2016 / May 2019 - EUR: 4,809,948.75 REA - 700621
Abstract	The project aims to provide an answer to pressing questions in the field of resilience of (smart) critical infrastructures by: (1) by identifying existing indicators suitable for assessing resilience of SCIs; (2) identifying new "smart" resilience indicators (RIs) – including those from Big Data; (3) developing a new advanced resilience assessment methodology based on smart RIs; (4) developing the interactive "SCI Dashboard" tool; (5) applying the methodology/tools in 8 case studies, integrated under one virtual, smart-city-like, European case study.This approach will allow benchmarking the best-practice solutions and identifying the early warnings, improving resilience of SCIs against new threats and cascading and ripple effects.
Website	http://www.smartresilience.eu-vri.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. European Virtual Institute For Integrated Risk Management Eu Vri Ewiv (DE) Consortium: 2. Applied Intelligence Analytics Limited (IE) 3. Bay Zoltan Alkalmazott Kutatasi Kozhasznu Nonprofit Kft. (HU) 4. Bergische Universitaet Wuppertal (DE) 5. Cork City Council (IE) 6. European Dynamics Advanced Systems Of Telecommunications Informatics And Telematics Sa (EL) 7. Fraunhofer Gesellschaft Zur Foerderung Der Angewandten Forschung E.V. (DE) 8. Ibm Israel - Science And Technology Ltd (IL) 9. Ivl Svenska Miljoeinstitutet Ab (SE) 10. Medizinische Universitaet Wien (AT) 11. Nis Ad Novi Sad (RS) 12. Orszagos Rendor – Fokapitanysag (HU) 13. Schweizerische Ruckversicherungs-Gesellschaft Ag (CH) 14. Srh Hochschulen Gmbh Univeristy Of Applied Sciences (DE) 15. Stadtwerke Heidelberg Gmbh (DE) 16. Steinbeis Advanced Risk Technologies Gmbh (DE) 17. Stiftelsen Sintef (NO) 18. Teknologian Tutkimuskeskus Vtt Oy (FI) 19. The Mayor And Commonalty And Citizens of the City Of London (UK) 20. Universitaet Stuttgart (DE)

TRUEPIVOT	
Title	Advanced engineering analytics for the detection of errors in the structural design of critical urban infrastructure (TRUEPIVOT)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2015 Topic code: DRS-17-2015-1 February 2016 / August 2016 - EUR: 50,000.00 EASME -712120
Abstract	TruePivot software can ensure that structural failures or collapse resulting from defective designs are completely eliminated for new critical infrastructure projects, and that historic design defects in existing infrastructure can be detected and amended before a catastrophic disruption occurs, for example ensuring a building has sufficient structural redundancy to resist a terrorist attack or natural disasteruses statistical analysis and advanced engineering algorithms to identify errors in structural designs.
Website	
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Truepivot LTD (IE)

5. CBRNE threats

The **CBRN Action Plan** as well as the **Explosives Action Plan** include various requirements regarding detection, surveillance and control, for example requirements for appropriate measures to ensure that security plans/security management systems are in place in high-risk chemical facilities. Controls also concern the delivery of high-risk chemicals and equipment by chemical industry to legitimate users and licensing schemes in particular for Chemical Warfare Agents (CWA) precursors. In the radiological and nuclear areas, controlling measures are focused on e.g. the causes and consequences of the loss of control over radioactive sources, on current status of used and disused sources in the EU and transport patterns for legal uses of radioactive sources.

5.1 Major accident hazards

Related to the major accident hazards and its risk management, the **Directive 2012/18/EU on major-accidents hazards involving dangerous substances** sets a number of obligations both to the Member States (e.g., legislation, organisation of the Inspections, reporting to the EC, etc.) as well as to the industrial establishments. As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Major accident hazards	INTeg-Risk MIRACLE SECURENV SNIFFER 2 TOSCA

In the H2020 2014-2015 calls, no dedicated research projects or studies have been carried out in this area.

5.2 Chemical threats

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

ChemSniff	
Title	Chemical sniffer device for multi-mode analysis of threat compounds (ChemSniff)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-2-2014 Topic code: DRS-17-2014 September 2015 / August 2017 - EUR 1,577,030.00 EASME - 674716
Abstract	ChemSniff will develop a multi-mode sniffer device for real-time detection of chemical compounds contained in CBRN-E substances. This will enable high throughput screening of soft targets such as vehicles, people and their personal effects. The instrument will allow reduced acquisition/operating costs, greater mobility, user friendliness and flexibility. Performance will be benchmarked against a conventional MS system for in-field analysis The project outcome will be an automated portable MS-based sniffer device, tested and evaluated for a range of security applications and markets by end-users.
Website	http://www.chemsniff.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Da Vinci Europe Laboratory Solutions BV (NL) Consortium: 2. Q Technologies Ltd (UK)

5.3 Biological threats

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Biological threats	ANTIBOTABE BIO-PROTECT EQUATOX MULTISENSE CHIP PLANTFOOSEC SPICED TWOBIAS

In the H2020 2014-2015 calls, no dedicated research projects or studies have been carried out in this area.

5.4 RN emergency

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
RN emergency	COCAE DETECT MODES-SNM MULTIBIODOSE NERIS-TP PREPARE REWARD SCINTILLA

In the H2020 2014-2015 calls, no dedicated research projects or studies have been carried out in this area.

ISF projects

The above projects are complemented by capacity-building projects funded by the Internal Security Fund Programme. Please note that ISF projects classification might differ from the taxonomy presented in this document. Visit ec.europa.eu/home-affairs/financing/fundings/security-and-safeguarding-liberties/internal-security-fund-police_en for more information on ISF projects.

Illicit Trafficking Radiation Assessment Program + 10 phase II Round Robin Tests	
Title	Illicit Trafficking Radiation Assessment Program + 10 phase II Round Robin Tests
Project number	HOME/2015/ISFP/AG/CBRN/8453
Contract details	€ 513,551.03
Consortium (prone to modification in case of GA amendment)	Coordinator: Agence Française d'Expertise Technique Internationale Consortium: Institut de Radioprotection et de Sûreté nucléaire (FR), Seibersdorf Labor (AT), Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung (DE)

5.5 Explosives and their precursors

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Explosives and their precursors	AVERT BONAS COMMONSENSE D-BOX EMPHASIS ENCOUNTER HOMER LOTUS OPTIX PREVAIL ROSFEN SALIANT SUBCOP TIRAMISU

These projects have been complemented by the following H2020 projects:

ACES	
Title	ACES: Air Cargo Explosive Screener (ACES)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-2-2014 Topic code: DRS-17-2014 October 2015 / September 2017 - EUR 863.330 EASME – 672001
Abstract	Certification of a new generation of explosive screeners for aeronautical cargo loaded in passenger aircrafts based on vapor detection, targeting the airport security market for cargo screening.
Website	http://www.sedet.com/index.html
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Sociedad Europea de Deteccion SL (ES)

AIRS	
Title	Advanced Intelligent Raman System for detection of explosives and harmful substances at urban soft targets (AIRS) ***This project also corresponds to the category 'Detection of potential CBRN-E threats at urban soft targets and urban CIs.'***
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2015 Topic code: DRS-17-2015-1 September 2015 / February 2016 - EUR 50.000 EASME - 684441
Abstract	Development of an Advanced Intelligent Raman system (AIRS), a new, reliable and portable, non-invasive in-situ method for the detection of hazardous materials, including explosives, especially at soft targets (including at borders, ports and other sensitive targets). The solution combines three technology developments: (1) time resolved measurement technique using advanced detector technologies to remove the fluorescence and improve the signal to noise of observations; (2) machine learning analysis tools to interpret instrument returns in the field quickly and efficiently allowing for multiple species to be identified; (3) combined with a new class of static Fourier transform spectrometer to increase the light capture and hence the sensitivity of the instrument.
Website	http://www.is-instruments.com/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. IS-INSTRUMENTS LIMITED (UK)

SENEX	
Title	Table Top Device based on Nanostructured Sensors for the continuous ENvironmental monitoring of EXplosive substances in sensitive areas (SENEX)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2014 Topic code: DRS-17-2014-1 July 2015 / January 2016 - EUR: 50,000.00 EASME - 673138
Abstract	SENEX Project aims at the industrialization of an table top explosive trace detector. The SENEX device is based on surface plasmonic resonance phenomenon and it fills the growing need of security professionals to have the ability to detect a wide range of explosive substances and to be able to adapt as threats and their needs change. SENEX technology first key market application is transportation security in airports and harbours to detect explosives, weapons, and illegal items in baggage or on passengers, airports threat areas are; another key market application is the freight terminal sectors where currently security explosive controls are often lacking.
Website	http://www.arc-projects.it/senex-project/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. ARC – Centro Ricerche Applicate (IT)

ISF projects

The above projects are complemented by capacity-building projects funded by the Internal Security Fund Programme. Please note that ISF projects classification might differ from the taxonomy presented in this document. Visit ec.europa.eu/home-affairs/financing/fundings/security-and-safeguarding-liberties/internal-security-fund-police_en for more information on ISF projects.

Minimising insider threats within the supply chain of the precursors for explosives	
Title	Minimising insider threats within the supply chain of the precursors for explosives
Project number	HOME/2015/ISFP/AG/CBRN/8463
Contract details	€ 434,795.00
Consortium (prone to modification in case of GA amendment)	Coordinator: Studiecentrum voor Kernergie Consortium: Enconet Consulting GmbH (Austria)

5.6 Water Safety & Security

Water security threats are directly related to the risks of quality degradation, either from an user's viewpoint (quality of drinking water) or ecological standpoint (ecological or chemical water status). While intentional degradation of water quality is not specifically covered by EU water policies, the quality deterioration is nevertheless regulated by the Water Framework Directive and its parent directives dealing with drinking water, priority substances and groundwater. As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Water safety and security Security	ISIS SAFEWATER SECUREAU TAWARA_RTM

These projects have been complemented by the following H2020 projects:

AquaSHIELD	
Title	Protecting citizens against intentional drinking water contamination with a water quality firewall (AquaSHIELD) ***This project also corresponds to the category 'Critical Water Infastructure'.***
Contract details	H2020 Secure Societies Call: H2020-SMEINST-2-2014 Topic code: DRS-17-2014 January 2015 / May 2017-10-01 - EUR 786,195 EASME - 666490
Abstract	Critical water infrastructures and high profile (soft) targets are vulnerable to intentional drinking water contamination, while physical access is difficult to control and traditional water quality monitoring solutions are largely inadequate to protect the water distribution process and its consumers. The project addresses the need for a contaminant warning system that can be deployed in the distribution network and that provides real-time water quality information and event classification to support rapid decision making and protect the health of citizens. The solution consists of a generic sensor for 24/7 online real-time detection of contamination events, online monitoring of chlorine residual as indicator for micro-biological contaminations, and rapid screening capability for a set of high priority threat substances.
Website	http://www.optiqua.com/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Optisense BV (NL)

BIWAS	
Title	Biological Water Alarm System (BiWAS) for protection of urban drinking water infrastructure against CBRN threats (BIWAS) ***This project also corresponds to the categories 'Detection of potential CBRN-E threats at urban soft targets/urban critical infrastructures'and 'Critical Water Infrastructure'.***
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2014 Topic code: DRS-17-2014-1 February 2015 / July 2015 - EUR 50,000 EASME - 664032
Abstract	Feasibility study (market investigation, business plan development, risk assessment, intellectual property management and innovation strategy development) for the technical and economic viability of Biological Water Alarm System (BiWAS): An innovative low-cost, automatic and portable early warning device for monitoring of drinking water safety over a broad spectrum of harmful substances, including (1) acute toxicant chemicals, (2) chronic carcinogenic chemicals, and (3) waterborne pathogens.
Website	http://www.sensovann.com/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. SensoVANN AS Consortium: 2. Mandalon Technologies AB

REGROUND	
Title	Colloidal Iron Oxide Nanoparticles for the REclamation of Toxic Metal Contaminated GROUNDwater Aquifers, Drinking Water Wells, and River Bank Filtrations (REGROUND)
Contract details	Climate Action, Environment, Resource Efficiency and Raw Materials Call: H2020-WATER-2014-two-stage Topic code: WATER-1a-2014 September 2015 / September 2018 - EUR: 2.734.222,50 EASME - 641768
Abstract	The main objective of the presented innovation action is the first application and near-market replication of a novel water nanogeotechnology for the immobilization of toxic metals in groundwater aquifers, drinking water wells, and river bank filtration sites. The basic concept of the technology is the creation of an adsorptive in situ barrier for the immobilization of toxic metal contaminations. The very core of this effort is the performance of two industrial-scale applications of our technology at two different types of contaminated sites.
Website	http://reground-project.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Universitaet Duisburg-Essen (DE) Consortium: 2. Acondicionamiento Tarrasense Associacion (ES) 3. Friedrich-Schiller-Universitat Jena (DE) 4. Fundacion Tecnalia Research & Innovation (ES) 5. Geoplano Consultores Sa (PT) 6. Katholieke Universiteit Leuven (BE) 7. Knowledge Innovation Market S.L. (ES) 8. Politecnico Di Torino (IT)

WATERGUARD	
Title	Safeguarding Water Distribution Systems from Contamination Threatsusing the SmartTap Platform (WATERGUARD)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2014 Topic code: DRS-17-2014-1 July 2015 / January 2016 - EUR: 50,000.00 EASME - 672922
Abstract	SmartTap Platform is an early-warning real-time water contamination monitoring system for the protection of water distribution systems against accidental or malicious chemical contamination events, provided as a service to utilities. The goal is to provide real-time water quality monitoring information to consumers and utilities and to reliably detect any contamination events within 1-2 hours, instead of days, thus significantly reducing the financial and societal impact of that event.
Website	http://www.aqualligence.com/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Aqualligence Limited (CY)

5.7 CBRNE (Cross-cutting)

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
CBRNE (Cross-cutting)	CATO COUNTERFOG DECOTESSC1 EDEN HANDHOLD IMSK PRACTICE SNIFFER 2

These projects have been complemented by the following H2020 projects:

ERNCIP CBRN STDS 16	
Title	ERNCIP thematic group activities in 2016 supporting development of Mandate 487 for standards in security (ERNCIP CBRN) (STDS 16) ***This project also corresponds to the category 'Detection of potential CBRN-E threats at urban soft targets/ urban critical infrastructures'.***
Contract details	H2020 Secure Societies Call: H2020-Adhoc-2014-20 Topic code: SECURITY January 2016 / January 2017 - EUR: 250,000.00 HOME - 714048
Abstract	The European Reference Network for Critical Infrastructure Protection (ERNCIP) has the mission to foster the emergence of innovative, qualified, efficient and competitive security solutions, through the networking of European experimental capabilities. This proposal will enable ERNCIP to focus its efforts on preparing concrete recommendations, pre-norms or workshop agreements, in the thematic areas of RN threat detection and analysis; the detection of chemical or biological agents in drinking water; testing the resistance of building glazing materials to explosive effects; and detection of explosives and weapons at secure locations.
Website	https://erncip-project.jrc.ec.europa.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. JRC – Joint Research Centre – European Commission (BE)

ROCSAFE	
Title	Remotely Operated CBRNe Scene Assessment Forensic Examination (ROCSAFE) ***This project also corresponds to the category 'Forensics'.***
Contract details	H2020 Secure Societies Call: H2020-FCT-2015 Topic code: FCT-03-2015 July 2016 / July 2019 - EUR: 4,781,061.25 HOME - 700264
Abstract	ROCSAFE aims change how CBRNe events are assessed, in order to ensure the safety of crime scene investigators by reducing the need for them to enter high-risk scenes when they have to determine the nature of threats and gather forensics. For this, ROCSAFE will make use of remotely-controlled robotic air and ground vehicles. Also, ROCSAFE will include new Central Decision Management software and a Command Centre. All images and data will be streamed to this, where it will be analysed and displayed. This will enable the scene commander to assess the nature of threats, develop an Action Plan and an Evidence Plan, supported as needed by the Central Decision Management. It will also assist in coordinating sensors and mobile units. Thus, ROCSAFE will ensure that CBRNe scenes are assessed more rapidly and thoroughly than is currently possible, and that forensic evidence is collected in a manner that stands up in court, without putting personnel at risk.
Website	http://www.nuigalway.ie/remoteforensics/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. National University Of Ireland, Galway (IE) Consortium: 2. Aeorum Espana S.L. (ES) 3. Ayuntamiento De Valencia (ES) 4. Consiglio Nazionale Delle Ricerche (IT) 5. Consorzio Creo-Centro Ricerche Elettro Ottiche (IT) 6. Department Of Defence (IE) 7. Health Service Executive Hse (IE) 8. Ibatech Tecnologia Sl (ES) 9. Inov Inesc Inovacao - Instituto De Novas Tecnologias (PT) 10. Microfluidic Chipshop Gmbh (DE) 11. Reamda Limited (IE) 12. Scorpion Networks Ltd (IE) 13. University College Cork - National (IE) 14. University Of Ireland, Cork

TOXI-triage	
Title	Integrated and adaptive responses to toxic emergencies for rapid triage: Engineering the roadmap from casualty to patient to survivor (TOXI-triage) ***This project also corresponds to the category 'Victim triage'.***
Contract details	H2020 Secure Societies Call: H2020-DRS-2014 Topic code: DRS-02-2014 September 2015 / September 2019 - EUR: 11,966,510.50 HOME - 653409
Abstract	The seven specific objectives of TOXI-triage address the operational; technological; ethical and societal dimensions of CBRN response and recovery, and importantly the economic base from which sustainable CBRN and multi-use systems are derived.The approach defines a concept of operations that envisages accelerated delivery of situational awareness through an ensemble of embedded sensors, drones, standoff detectors (including cameras), artificial intelligence for processing sensor signals and web-traffic from social media, and centralised command and control. TOXI-triage intends that its outcomes will be used routinely in medical/environmental/urban and search and rescue emergencies.
Website	http://toxi-triage.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Loughborough University (UK) Consortium: 2. Airsense Analytics Gmbh (DE) 3. Atos Spain Sa (ES 4. Environics Oy (FI) 5. G.A.S. Gesellschaft fur Analytischesensorsysteme M.B.H. (DE) 6. Gottfried Wilhelm Leibniz Universitaet Hannover (DE) 7. Hasicsky Zachranny Sbor Moravskoslezskeho Kraje (CZ) 8. Helmholtz-Zentrum Fuer Umweltforschung Gmbh – Ufz (DE) 9. Helsingin Yliopisto (FI) 10. Jyvaskylan Yliopisto (FI) 11. Lothian Health Board (UK) 12. Mikkelin Kaupunki (FI) 13. Mikkelin Kehitysyhtio Miksei Oy (FI) 14. Ministry of National Defence, Greece (EL) 15. National Technical University Of Athens – Ntua (EL) 16. Oslo Universitetssykehus Hf (NO) 17. Prometech Bv (NL) 18. T4i Engineering Ltd (UK) 19. The University Of Edinburgh (UK) 20. Universitaet Paderborn (DE)

ISF projects

The above projects are complemented by capacity-building projects funded by the Internal Security Fund Programme. Please note that ISF projects classification might differ from the taxonomy presented in this document. Visit ec.europa.eu/home-affairs/financing/fundings/security-and-safeguarding-liberties/internal-security-fund-police_en for more information on ISF projects.

Aviation Insider Threat Recognition and Prevention - EU AITRAP	
Title	Aviation Insider Threat Recognition and Prevention - EU AITRAP
Project number	HOME/2015/ISFP/AG/CBRN/8460
Contract details	€ 749,550.00
Consortium (prone to modification in case of GA amendment)	Coordinator: CoESS Consortium: Securitas (BE), DHL (DE), IMFRA (BE)

CBRNE Law Enforcement Training Initiative - CELECTIVE	
Title	CBRNE Law Enforcement Training Initiative - CELECTIVE
Project number	HOME/2015/ISFP/AG/CBRN/8446
Contract details	€ 531,268.80
Consortium (prone to modification in case of GA amendment)	Coordinator: Umeå University, European CBRNE Center Consortium: Totalförsvarets Forskningsinstitut - FOI (SE), Nederlandse Organisatie Voor Toegepast Natuurwetenschappelijk Onderzoek -TNO (NL), Statni Ustav Jaderne, Chemicke A Biologicke Ochrany vvi -SUJCHBO (CZ)

Coordinated trans-national training programme for prevention and mitigation of CBR release induced by non-state actors	
Title	Coordinated trans-national training programme for prevention and mitigation of CBR release induced by non-state actors
Project number	HOME/2015/ISFP/AG/CBRN/8464
Contract details	€ 549,970.00
Consortium (prone to modification in case of GA amendment)	Coordinator: Instytut Chemii Przemysłowej im. Prof. Ignacego Mościckiego/ Industrial Chemistry Research Institute/ ICRI Consortium: Fundacja Miedzynarodowe Centrum Bezpieczenstwa Chemicznego/ International Centre for Chemical Safety and Security (PL); Fachhochschule fur Offentliche Verwaltung und Rechtspflege in Bayern/ University of Applied Sciences for Public Administration and Legal Affairs, Police Department (DE); Hotzone Solutions BV (NL).

EU Police Intervention and Response Training Centre of Excellence	
Title	EU Police Intervention and Response Training Centre of Excellence
Project number	HOME/2015/ISFP/AG/CBRN/8458
Contract details	€ 849,358.30
Consortium (prone to modification in case of GA amendment)	Coordinator: Belgian Federal Police Consortium: Grand-ducal Police (LU), Dutch National Police (NL)

Preventing and fighting CBRN-E terrorism – building capacity of actors involved in the detection and mitigation of CBRN-E risks at air and road border crossings on European level	
Title	Preventing and fighting CBRN-E terrorism – building capacity of actors involved in the detection and mitigation of CBRN-E risks at air and road border crossings on European level
Project number	HOME/2015/ISFP/AG/CBRN/8456
Contract details	€ 328,884.74
Consortium (prone to modification in case of GA amendment)	Coordinator: KOMENDA WOJEWÓDZKA POLICJI W LUBLINIE / REGIONAL POLICE HEADQUARTERS IN LUBLIN Consortium: Riaditeľstvo hraničnej a cudzineckej polície Sobrance / Border and Alian Police Directorate Sobrance (SK); Nadbużański Oddział Straży Granicznej / Nadbużański Border Guard Regional Unit (PL); Port Lotniczy Lublin S.A. / Lublin airport (PL); Politsei – ja Piirivalveamet / Estonian Police and Border Guard Board (EE)

Shielding South-east Europe from CBRN-E threats	
Title	Shielding South-east Europe from CBRN-E threats
Project number	HOME/2015/ISFP/AG/CBRN/8457
Contract details	€ 524,248.31
Consortium (prone to modification in case of GA amendment)	Coordinator: Kentro Meleton Asfaleias/ Center for Security Studies Consortium: Advanced Integrated Technology Solutions and Services Ltd (ADITES) (CY); Cyprus Police - Emergency Response Unit (CY); Piraeus Port Authority S.A. (EL)

6. Crime and terrorism

6.1 Terrorist threats

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Terrorist threats	ADABTS ADVISE COREPOL DECOTESSC1 DETECTER EWISA EXPEDIA GIFT-CBRN HYPERION INDECT PRIME PROACTIVE RAPTOR RECONASS SAFE-COMMS SAMURAI SMARTPREVENT TACTICS VOX-POL

These projects have been complemented by the following H2020 projects:

TENSOR	
Title	Retrieval and Analysis of Heterogeneous Online Content for Terrorist Activity Recognition (TENSOR) ***This project also corresponds to the category 'Radicalisation'.***
Contract details	H2020 Secure Societies Call: H2020-FCT-2015 Topic code: FCT-06-2015 September 2016 / September 2019 - EUR: 4,977,200.50 HOME - 700024
Abstract	The main objective of the TENSOR project is to provide a powerful terrorism intelligence platform offering LEAs fast and reliable planning and prevention functionalities for the early detection of terrorist organised activities, radicalisation and recruitment. The platform integrates a set of automated and semi-automated tools for efficient and effective searching, crawling, monitoring and gathering online terrorist-generated content from the Surface and the Dark Web.The project brings together industry, LEAs, legal exerts and research institutions.
Website	http://tensor-project.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Police Service of Northern Ireland (UK) Consortium 2. Cybercrime Research Institute Gmbh (DE) 3. Departament D'interior - Generalitat De Catalunya (ES) 4. Ethniko Kentro Erevnas Kai Technologikis Anaptyxis (EL) 5. European Organisation For Security Scrl (BE) 6. Fachhochschule fur Offentliche Verwaltung und Rechtspflege in Bayern (DE) 7. Kentro Meleton Asfaleias (EL) 8. Leonardo - Societa Per Azioni (IT) 9. Linguatec Gmbh (DE) 10. National Crime Agency (UK) 11. Police and Crime Commissioner for West Yorkshire (UK) 12. Rinicom Limited (UK) 13. Service Public Federal Interieur (BE) 14. Sheffield Hallam University (UK) 15. Thales Communications & Security Sas (FR) 16. Thales Sa (FR) 17. Universidad Pompeu Fabra (ES)

GTCMR	
Title	Global Terrorism and Collective Moral Responsibility: Redesigning Military, Police and Intelligence Institutions in Liberal Democracies (GTCMR) ***This project also corresponds to the category 'Ethics, Societal implications'.***
Contract details	Excellent Science Call: ERC-2014-ADG Topic code: ERC-ADG-2014 January 2016 / January 2021 - EUR: 2.479.810,00 ERCEA - 670172
Abstract	Examination of counter-terrorism as a morally complex enterprise involving police, military, intelligence agencies and non-security agencies. The research endeavour argues that counter-terrorism should be framed as a collective moral responsibility of governments, security institutions and citizens.
Website	https://www.tudelft.nl/en/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Technische Universiteit Delft (NL) Consortium: 2. The Chancellor, Masters And Scholars Of The University Of Oxford (UK)

ISF projects

The above projects are complemented by capacity-building projects funded by the Internal Security Fund Programme. Please note that ISF projects classification might differ from the taxonomy presented in this document. Visit ec.europa.eu/home-affairs/financing/fundings/security-and-safeguarding-liberties/internal-security-fund-police_en for more information on ISF projects.

ATLAS	
Title	ATLAS
Project number	7242
Contract details	€ 1,452,704.81
Consortium (prone to modification in case of GA amendment)	Coordinator: GSG 9 OF THE FEDERAL POLICE

ATLAS 2015	
Title	ATLAS 2015
Project number	HOME/2015/ISFP/AG/ATLS/0001
Contract details	€ 999,977.17
Consortium (prone to modification in case of GA amendment)	Coordinator: GSG 9 OF THE FEDERAL POLICE

6.2 Forensics

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Forensics	3D-FORENSICS BEAT CRIM-TRACK EPOOLICE EUROFORGEN-NOE FORLAB GIFT-CBRN GRAFFOLUTION LASIE MEPROCS MIDAS MISAFE ODYSSEY P-REACT RECOBIA SAWSOC SCIIMS SIIP TRACE VALCRI

These projects have been complemented by the following H2020 projects:

ASGARD	
Title	Analysis System for Gathered Raw Data (ASGARD)
Contract details	H2020 Secure Societies Call: H2020-FCT-2015 Topic code: FCT-01-2015 September 2016 / February 2020 - EUR 11,992,553.25 HOME - 700381
Abstract	Development of a community of LEA users, using technology as a focal point for cooperation. Technologies are transferred to LEA users under a restricted open source community scheme focusing on Forensics, Intelligence and Foresight (Intelligence led prevention and anticipation). Research areas will focus on driving progress in the processing of seized data, availability of massive amounts of data and big data solutions. Results are demonstrated in traditional Use Cases, trials and Hackathons.
Website	http://www.asgard-project.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Fundacion Centro de Tecnologias de Interaccion Visual y Comunicaciones Vicomtech Consortium: 2. Aditess Advanced Integrated Technology Solutions & Services Ltd (CY) 3. Ait Austrian Institute Of Technology Gmbh (AT) 4. Centro Nacional de Supercomputación – Barcelona (ES) 5. Bundeskriminalamt (DE) 6. Bundesministerium fuer Inneres (AT) 7. Commissariat a l'Energie Atomique et aux Energies Alternatives (FR) 8. Le Service Public Federal Justice (BE) 9. Dublin City Univ. (IE) 10. Ingegneria Informatica SPA (IT) 11. Ethniko Kentro Erevnas Kai Technologikis Anaptyxis (EL) 12. Home Office (UK) 13. IBM Ireland (IE) 14. INOV Inesc Inovacao (PT) 15. Kentro Meleton Asfaleias (EL) 16. L-1 Identity Solutions AG (DE) 17. Ministere de l'interieur (FR) 18. Ministério da Justiça (PT) 19. Ministerio del Interior (ES) 20. Ministero della Difesa (IT) 21. TNO (NL) 22. Netherlands Forensic Institute (NL) 23. PDM e FC Projecto Desenvolvimento Manutencao Formacao e Consultadorialda (PT) 24. Poliisihallitus (FI) 25. Polismyndigheten Swedish Police Authority (SE) 26. Rikskpolisstyrelsen - Rikskriminalpolisen National (SE) 27. Securiq Sistemas SL (ES) 28. Service Public Federal Interieur (BE) 29. Totalforsvarets Forskningsinstitut (DE) 30. Univ. degli Studi di Modena e Reggio Emilia (IT) 31. Univ. Konstanz (DE) 32. Univ. van Amsterdam (NL) 33. Univ. College Dublin (IE) 34. Univ. of Ulster (UK) 35. Zentrum fur Risiko- und Krisenmanagement – ZRK (AT)

FORENSOR	
Title	FOREnsic evidence gathering autonomous seNSOR (FORENSOR)
Contract details	H2020 Secure Societies Call: H2020-FCT-2014 Topic code: FCT-05-2014 September 2015 / September 2018 - EUR: 4,043,546.25 REA - 653355
Abstract	FORENSOR is a novel, ultra-low-power, intelligent, miniaturised, low-cost, wireless, autonomous sensor for evidence gathering. It contains an ultra-sensitive camera and built-in intelligence that allows it to operate at remote locations, automatically identify pre-defined criminal events, and alert LEAs in real time while providing and storing the relevant video, location and timing evidence. The combination of built-in intelligence with ultra-low power consumption could help LEAs take the next step in fighting severe crimes.
Website	http://forensor-project.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Ethniko Kentro Erevnas Kai Technologikis Anaptyxis (EL) Consortium: 2. Almaviva – The Italian Innovation Company spa (IT) 3. Ayuntamiento de Valencia (ES) 4. Emza Visual Sense Ltd (IL) 5. Fondazione Bruno Kessler (IT) 6. JCP-Connect (FR) 7. Ministério da Justiça (PT) 8. Stmicroelectronics SRL (IT) 9. Synelixis Lyseis Pliroforikis Automatismou & Tilepikoinonion Monoprosopi Epe (EL) 10. Visionware-sistemas de informacao SA (PT) 11. Vrije Universiteit Brussel (BE)

RAMSES	
Title	Internet Forensic platform for tracking the money flow of financially-motivated malware (RAMSES)
Contract details	H2020 Secure Societies Call: H2020-FCT-2015 Topic code: FCT-04-2015 September 2016 / September 2019 - EUR: 3,532,000.00 HOME - 700326
Abstract	The objective of RAMSES is to design and develop a holistic, intelligent, scalable and modular platform for LEAs to facilitate digital Forensic Investigations. The system will extract, analyse, link and interpret information extracted from Internet related with financially-motivated malware. Customers, developers and malware victims will be included in order to obtain a better understanding of how and where malware is spread and to get to the source of the threat. To achieve these objectives, this project will rely on disruptive Big Data technologies to firstly extract and storage, and secondly look for patterns of fraudulent behaviour in enormous amounts of unstructured and structured data.
Website	https://ramses2020.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Treelogic Telematica y Logica Racional para la Emprese Europea Sl (ES) Consortium: 2. Fachhochschule fur Offentliche Verwaltung und Rechtspflege in Bayern (DE) 3. Ministério da Justiça (PT) 4. Ministerio del Interior (ES) 5. Politecnico di Milano (IT) 6. RISSC – Centro Ricerche e Studi Susicureza e Criminalita Associazione (IT) 7. Service Public Federal Interieur (BE) 8. Trilateral Research Ltd (UK) 9. Univ. Complutense de Madrid (ES) 10. Univ. des Saarlandes (DE) 11. Univ. of Kent (UK)

IDENTITY	
Title	Computer Vision Enabled Multimedia Forensics and People Identification (IDENTITY)
Contract details	Excellent Science Call: H2020-MSCA-RISE-2015 Topic code: MSCA-RISE-2015 January 2016 / January 2020 - EUR: 2.025.000,00 REA - 690907
Abstract	This proposal also aims at consolidating the integration of multimedia forensics into the forensic science. Multimedia forensics is concerned with the development of scientific methods to extract, analyse and categorize digital evidence derived from multimedia sources, such as imaging devices. For example, developing technologies to identify, categorise and classify the source of images and video, as well as to authenticate and verify the integrity of their content. Since the enabling technologies in multimedia forensics are similar to those used for identification and verification purposes in biometric forensics, the integration of these areas is seamless.
Website	dcs/research/df/identity/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. The University Of Warwick (UK) Consortium: 2. Eurecom (FR) 3. Hong Kong Baptist University (HK) 4. Indraprastha Institute Of Information Technology Dehli (IN) 5. Institute Of Automation Chinese Academy Of Sciences (CN) 6. Michigan State University (US) 7. Nanyang Technological University (SG) 8. New Jersey Institute Of Technology (US) 9. Paris-Lodron-Universitat Salzburg (AT) 10. Social Currencies Management S.L. (ES) 11. South China University Of Technology (CN) 12. Universidade Estadual De Campinas (BR) 13. Universita Degli Studi Di Sassari (IT) 14. Xlab Razvoj Programske Opreme In Svetovanje Doo (SL)

6.3 Cyber crime & cyber security

6.3.1 NIS - Cyber Security Management (for SMEs / business, local public authorities)

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Cyber Security Management (for SMEs / business, local public authorities)	PRECYSE SERENITI

These projects have been complemented by the following H2020 projects:

C3ISP	
Title	Collaborative and Confidential Information Sharing and Analysis for Cyber Protection (C3ISP)
Contract details	H2020 Secure Societies Call: H2020-DS-2015-1 Topic code: DS-04-2015 October 2016 / September 2019 - EUR 4,176,445.63 REA - 700294
Abstract	Definition of a collaborative, multi-domain and confidential information sharing, analysis and protection framework as a service for cyber security management and improved detection of cyber threats and response capabilities. Creation of a framework for secure data analytics where data access and data analytics operations are regulated by data sharing agreements. The framework is validated through four Pilots covering several relevant areas as enterprise security, governmental CERTS, Internet Service Providers (ISPs) and, in particular, for SMEs interested in holistic cyber protection solutions (including managed security services).
Website	http://c3isp.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Consiglio Nazionale delle Ricerche (IT) Consortium: 2. 3D Repo Ltd (UK) 3. British Telecommunications Public Limited Company (UK) 4. Chino Societa a Responsabilita Limitata Semplificata (IT) 5. Commissariat a l' Energie Atomique et aux Energies Alternatives (FR) 6. Gridpocket Systems Spolka Akcyjna (PL) 7. Hewlett Packard Italiana SRL (IT) 8. Istituto Superiore delle Comunicazioni e delle Tecnologie dell'Informazione (IT) 9. SAP SE (DE) 10. Connected Digital Economy Catapult Ltd (UK) 11. Univ. of Kent (UK)

CANVAS	
Title	Constructing an Alliance for Value-driven Cybersecurity (CANVAS)
Contract details	H2020 Secure Societies Call: H2020-DS-2015-1 Topic code: DS-07-2015 September 2016 / August 2019 - EUR 1,000,000.00 REA - 700540
Abstract	Construction of a community that unifies different scientific traditions (ethical, legal, empirical and technological) in pursuit of value-driven cyber security objectives from the presupposition that technology development in cybersecurity should incorporate European values and fundamental rights. Focus on three application domains with unique value-profiles and complementing cyber security exigencies: the health system, finance, and police / national security. Following a three-step process (1) structure existing knowledge, (2) design a network for exchanging knowledge and generating insights across domains, and (3) disseminate the insights gained through three means), a reference curriculum for value-driven cybersecurity is developed, with a focus on industry-training, briefing packages for policy stakeholders, and a MOOC (massive open online course) on value-driven cybersecurity.
Website	https://canvas-project.eu/canvas/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Univ. Zuerich (CH) Consortium: 2. Berner Fachhochschule (CH) 3. Dublin City Univ. (IE) 4. F-SECURE OYJ (FI) 5. Ostbayerische Technische Hochschule Regensburg (DE) 6. Technische Univ. Delft (NL) 7. Unabhangiges Landeszentrum fur Datenschutz (DE) 8. Univ. Hamburg (DE) 9. Univ. Rovira i Virgili (ES) 10. Univ. de Lausanne (CH) 11. Vrije Univ. Brussel (BE)

CIPSEC	
Title	Enhancing Critical Infrastructure Protection with innovative SECurity framework (CIPSEC)
Contract details	H2020 Secure Societies Call: H2020-DS-2015-1 Topic code: DS-03-2015 May 2016 / April 2019 - EUR 5,258,316.25 REA - 700378
Abstract	The main aim of CIPSEC is to create a unified security framework that orchestrates state-of-the-art heterogeneous security products to offer high levels of protection in IT (information technology) and OT (operational technology) departments of CIs. As part of this framework CIPSEC will offer a complete security ecosystem of additional services that can support the proposed technical solutions to work reliably and at professional quality. These services include vulnerability tests and recommendations, key personnel training courses, public-private partnerships (PPPs) forensics analysis, standardization and protection against cascading effects.
Website	http://www.cipsec.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Atos Spain SA (ES) Consortium: 2. Aegis IT Research Ltd (UK) 3. Atos IT Solutions And Services Iberia SL (ES) 4. Bitdefender SRL (RO) 5. Comsec Limited (IL) 6. Consorzio per il Sistema Informativo (CSI Piemonte) (IT) 7. DB Netz AG (DE) 8. Empelor Gmbh (CH) 9. Foundation for Research and Technology Hellas (EL) 10. Hospital Clinic i Provincial de Barcelona (ES) 11. Panepistimio Patron (EL) 12. Technische Univ. Darmstadt (DE) 13. Univ. Politecnica de Catalunya (ES) 14. Worldsensing Limited (UK)

DiSIEM	
Title	Diversity Enhancements for SIEMs (DiSIEM)
Contract details	H2020 Secure Societies Call: H2020-DS-2015-1 Topic code: DS-04-2015 September 2016 / September2019 - EUR: 3,445,875.75 REA - 700692
Abstract	The DiSIEM project aims to enhance existing SIEM systems with diversity-related technology. The project aims to (1) enhance the quality of events collected using a diverse set of sensors and novel anomaly detectors, (2) add support for collecting infrastructure-related information from open-source intelligence data available on diverse sources from the internet, (3) create new ways for visualising the information collected in the SIEM and provide high-level security metrics and models for improving security-related decision project, and (4) allow the use of multiple storage clouds for secure long-term archival of the raw events feed to the SIEM.
Website	http://disiem-project.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Fundacao da Faculdade de Ciencias da Universidade de Lisboa FP (PT) Consortium: 2. Amadeus IT Group SA (ES) 3. Atos Spain SA (ES) 4. City University of London (UK) 5. Digitalmr Limited (UK) 6. EDP – Energias de Portugal SA (PT) 7. Faculdade de Ciencias da Universidade de Lisboa (PT) 8. Frauhofer Gesellschaft Zur Foerderung der Angewandten Forschung E.V. (DE)

DOGANA	
Title	aDvanced sOcial enGineering And vulNerability Assesment Framework (DOGANA)
Contract details	H2020 Secure Societies Call: H2020-DS-2014-1 Topic code: DS-06-2014 September 2015 / September 2018 - EUR: 4,599,806.38 REA - 653618
Abstract	DOGANA develops a framework that delivers "aDvanced sOcial enGineering And vulNerability Assessment". The underlying concept of DOGANA is that Social Vulnerabilities Assessments (SVAs), when regularly performed with the help of an efficient framework, help deploy effective mitigation strategies and lead to reducing the risk created by modern Social Engineering 2.0 attack techniques. Two relevant features of the proposed framework are: (1) the presence of the "awareness" component within the framework as the cornerstone of the mitigation activities; (2) the legal compliance by design of the whole framework.The outcomes of the project are also expected to provide a solid basis to revise the insurance models for cyber-attacks related risks.
Website	https://www.dogana-project.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Engineering International Belgium SA (BE) Consortium: 2. AIT Austrian Institute of Technology GMBH (AT) 3. CEFRIEL – Societa Consortile a Responsabilita Limitata (IT) 4. Consorzio Nazionale Interuniversitario Per le Telecomunicazioni (IT) 5. Dansk Brand – OG Sikringsteknisk Institut Forening (DK) 6. Elta Systems Ltd (IL) 7. Engineering – Ingegneria Informatica Spa (IT) 8. Gabinete Nacional de Seguranca (PT) 9. Hewlett Packard Italiana Srl (IT) 10. Inov Inesc Inovacao – Instituto de Novas Technologias (PT) 11. Katholieke Universiteit Leuven (BE) 12. Ministry of National Defence, Greece (EL) 13. National Center for Scientific Research 'Demokritos' (EL) 14. Proprs Ltd. (UK) 15. Regia Autonoma de Transport Bucuresti (RO) 16. Scuola Aniversitaria Professionale Della Svizzera Italiana (SUPSI) (CH) 17. Thales Communications & Security SAS (FR) 18. Thales Services SAS (FR) 19. Visonware-Sistemas de Informacao SA (PT)

HDIV	
Title	HDIV: SELF-PROTECTED WEB APPLICATIONS (HDIV) ***This project also corresponds to the category 'Multi-sector cyber and physical threats to CI's, including ICT'.***
Contract details	H2020 Secure Societies Call: H2020-SMEINST-2-2015 Topic code: DRS-17-2015 November 2015 / November 2017 - EUR: 927,500.00 EASME - 696973
Abstract	HDIV is a technology that follows a security by design approach, generating self-protected web applications. HDIV is integrated within the web applications and within the web application development environments. It eliminates the complexity and maintenance cost of WAF solutions and increases the protection levels. The main objective of the project is to accelerate the introduction into the worldwide market of a set of products based on HDIV, contributing to solve the important threats derived from web application weaknesses.
Website	https://www.arima.eu/en/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. ARIMA Software Design SLL (ES) Consortium: 2. 2. HDIV Security SL (ES)

LIGHTest	
Title	Lightweight Infrastructure for Global Heterogeneous Trust management in support of an open Ecosystem of Stakeholders and Trust schemes (LIGHTest)
Contract details	H2020 Secure Societies Call: H2020-DS-2015-1 Topic code: DS-05-2015 September 2016 / September 2019 - EUR: 7,595,955.63 REA - 700321
Abstract	LIGHTest aims to create a global cross-domain trust infrastructure that renders it transparent and easy for verifiers to evaluate electronic transactions. By querying different trust authorities world-wide and combining trust aspects related to identity, business, reputation etc. it will become possible to conduct domain-specific trust decisions. This is achieved by reusing existing governance, organization, infrastructure, standards, software, community, and know-how of the existing Domain Name System, combined with new innovative building blocks. This approach allows an efficient global rollout of a solution that assists decision makers in their trust decisions. By integrating mobile identities into the scheme, LIGHTest also enables domain-specific assessments on Levels of Assurance for these identities.
Website	http://www.lightest-community.org/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Fraunhofer Gesellschaft zur Foerderung der Angewandten Forschung EV (DE) Consortium: 2. Atos Spain SA (ES) 3. Danmarks Tekniske Universitet (DK) 4. European Electronic Messaging Association AISBL (BE) 5. Giesecke & Devrient Gesellschat mit Beschrankter Haftung (DE) 6. GMO Globalsign OY (FI) 7. IBM Danmark APS (DK) 8. Open Identity Exchange Europe (UK) 9. Sociedad Estatal Correos y Telegrafos SA (ES) 10. Stichting NLNET Labs (NL) 11. Technishe Universitaet Graz (AT) 12. Time.Lex (BE) 13. Turkye Bilimsel ve Teknolojik Arastirma Kurumu (TR) 14. Universitaet Stuttgart (DE)

OCTAVE	
Title	Objective Control for TAlker VErification (OCTAVE)
Contract details	H2020 Secure Societies Call: H2020-DS-2014-1 Topic code: DS-02-2014 June 2015 / August 2017 - EUR: 4,406,116.00 REA - 647850
Abstract	OCTAVE will integrate hybrid ASV systems with environmental robustness and anti-spoofing technologies to deliver a scalable, trusted biometric authentication service (TBAS). The OCTAVE platform will reduce the economic and practical burdens related to password loss and recovery. The delegation of authentication to a single, yet distributed TBAS, will increase trust and privacy, avoid single points of failure and allow for rapid breach notification and remediation. OCTAVE will thus fuel new opportunities for commercial services making use of electronic identification and authentication.
Website	https://www.octave-project.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Fondazione ugo Bordoni (IT) Consortium: 2. Aalborg Universitet (DK) 3. Advalia Srl (IT) 4. Aplcomp OY (FI) 5. Atos Spain SA (ES) 6. Eurecom (FR) 7. Findomestic Baca SPA (IT) 8. Ita-Suomen Yliopisto (FI) 9. Research and Education Laboratory in Information Technologies (EL) 10. Societa per Azioni Esercizi Aeroportuali Sea spa (IT) 11. Univ. of Hertfordshie Higher Education Corporation (UK) 12. Validsoft UK Limited (UK)

PROTECTIVE	
Title	Proactive Risk Management through Improved Cyber Situational Awareness (PROTECTIVE)
Contract details	H2020 Secure Societies Call: H2020-DS-2015-1 Topic code: DS-04-2015 September 2016 / September 2019 - EUR: 4,160,596.88 REA - 700071
Abstract	PROTECTIVE is designed to improve an organisations ongoing awareness of the risk posed to its business by cyber security attacks. PROTECTIVE (1) increases the computer security incident response team's (CSIRT) threat awareness through improved security monitoring and increased sharing of threat intelligence between organisations within a community and (2) it ranks critical alerts based on the potential damage the attack can inflict. Hereby, organisations are better prepared to handle incoming attacks, malware outbreaks and other security problems and to guide the development of the prevention and remediation processes.
Website	https://protective-h2020.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Athlone Institute of Technology (IE) Consortium: 2. Agentia de Administrare a Retelei Nationale de Informatica Pentru Educatie si Cercetare (RO) 3. Cesnet Zajmove Sdruzeni Pravnickychob (CH) 4. Clean Communications Limited (IE) 5. Gmv Soluciones Globales Internet sau (ES) 6. Instytut Chemii Bioorganicznej Polskiej Aakademii Nauk (PL) 7. Itti Sp Zoo (PL) 8. Synyo Gmbh (AT) 9. Technische Universitat Darmstadt (DE) 10. The Chancellor, Masters and Scholars of the University of Oxford (UK)

SHIELD	
Title	Securing against intruders and other threats through a NFV-enabled environment (SHIELD)
Contract details	H2020 Secure Societies Call: H2020-DS-2015-1 Topic code: DS-04-2015 September 2016 / March 2019 - EUR: 3,607,245.00 REA - 700199
Abstract	The SHIELD project proposes a universal solution for dynamically establishing and deploying virtual security infrastructures into ISP and corporate networks. SHIELD virtualises security appliances into virtual Network Security Functions (vNSFs), to be instantiated within the network infrastructure using NFV technologies and concepts, effectively monitoring and filtering network traffic in a distributed manner. This approach promotes openness and interoperability of security functions and offers a zero-CAPEX security solution for citizens and SMEs.
Website	https://www.shield-h2020.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Space Hellas Anonymi Etaireia Systimata Kai Ypiresies Tilepikoinonionpliroforik-is Asfaleias - Idiotiki Epicheirisi Parochis Yperision Asfa (EL) Consortium: 2. Agenzia per L'italia Digitale (IT) 3. Fundacio Privada I2cat, Internet i Innovacio Digital a Catalunya (ES) 4. Hewlett-Packard Limited (UK) 5. Hp Information Security UK Limited (UK) 6. Incites Consulting Sarl (LU) 7. Infili Technologies Private Company (EL) 8. National Center For Scientific Research "Demokritos" (EL) 9. Orion Innovations Private Company (EL) 10. Politecnico Di Torino (IT) 11. Telefonica Investigacion Y Desarrollo Sa (ES) 12. Ubiwhere Lda (PT)

SISSDEN	
Title	Secure Information Sharing Sensor Delivery event Network (SISSDEN)
Contract details	H2020 Secure Societies Call: H2020-DS-2015-1 Topic code: DS-04-2015 May 2016 / May 2019 - EUR: 4,912,692.50 REA - 700176
Abstract	SISSDEN is a project aimed at improving the cybersecurity posture of EU entities and end users through development of situational awareness and sharing of actionable information.The main goal of the project is creation of multiple high-quality feeds of actionable security information that will be used for remediation purposes and for proactive tightening of computer defences. This will be achieved through development and deployment of a distributed sensor network based honeypot/darknet technologies and creation of a high-throughput data processing center. SISSDEN will provide in-depth analytics on the collected data and develop metrics that will be used to establish the scale of most important security issues in the EU, and impact of the project itself.
Website	https://sissden.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Naukowa I Akademicka Siec Komputerowa (PL) Consortium: 2. Cyberdefcon Limited (UK) 3. Deutsche Telekom AG (DE) 4. Eclexys Sagl (CH) 5. Montimage Eurl (FR) 6. Poste Italiane - Societa Per Azioni (IT) 7. Stichting The Shadowserver Foundation Europe (NL) 8. Universitat Des Saarlandes (DE)

WISER	
Title	Wide-Impact cyber SEcurity Risk framework (WISER)
Contract details	H2020 Secure Societies Call: H2020-DS-2014-1 Topic code: DS-06-2014 June 2015 / December 2017 - EUR: 2,562,596.00 REA - 653321
Abstract	WISER delivers a cyber-risk management framework able to assess, monitor and mitigate the risks in real time, in multiple industries. The WISER framework will ensure cyber risk management becomes an integral part to good business practice in both critical infrastructure and process owners and ICT-intensive SMEs. Ultimately, WISER implements on-demand service composition and ignites innovative assurance models, also from the point of view of premiums determination targeting.
Website	http://www.cyberwiser.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Atos Spain Sa (ES) Consortium: 2. Aon Spa Insurance & Reinsurance Brokers (IT) 3. Aon Uk Limited (UK) 4. Atos It Solutions and Services Iberia Sl (ES) 5. Domotecnica Spa (IT) 6. Enervalis (BE) 7. Rexel Developpement Sas (FR) 8. Rexel Finland Oy (FI) 9. Stiftelsen Sintef (NO) 10. Trust-It Services Limited (UK) 11. Xlab Razvoj Programske Opreme In Svetovanje Doo (SL)

6.3.2 Privacy and Data Protection

ARIES	
Title	reliAble euRopean Identity EcoSystem (ARIES)
Contract details	H2020 Secure Societies Call: H2020-FCT-2015 Topic code: FCT-09-2015 September 2016 / February 2019 - EUR 2,247,002 HOME - 700085
Abstract	Use of virtual and mobile IDs cryptographically derived from strong eID documents and linked to citizens' biometric features with the aim to prevent identity theft and related crimes in the physical (e.g. an airport) and virtual (e.g eCommerce) domains. The project aims to deliver a comprehensive framework for a reliable e-identity ecosystem in Europe. Outcomes and will be demonstrated in two use cases: secure eCommerce and identity virtualization for secure travel.
Website	http://aries-project.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Atos SA (ES) Consortium: 2. Atos Consulting Canarias SA (ES) 3. Gemalto SRO (CZ) 4. Gobierno Vasco (ES) 5. Modelo.Com SA (PT) 6. Police and Crime Commissioner - West Yorkshire (UK) 7. Safran Identity & Security (FR) 8. Saher UK Ltd (UK) 9. Service Public Federal Interieur (BE) 10. Sonae Center Servicos II S.A. (PT) 11. Univ. De Murcia (ES)

CREDENTIAL	
Title	Secure Cloud Identity Wallet (CREDENTIAL)
Contract details	H2020 Secure Societies Call: H2020-DS-2014-1 Topic code: DS-02-2014 October 2015 / October 2018 - EUR: 5,978,082.50 REA - 653454
Abstract	The goal of CREDENTIAL is to develop, test and showcase innovative cloud based services for storing, managing, and sharing digital identity information and other critical personal data. The use of sophisticated proxy cryptography schemes will enable a secure and privacy preserving information sharing network for cloud-based identity information in which even the identity provider cannot access the data in plain-text and hence protect access to identity data. Credential focus not only on evaluating and applying novel crypto-approaches for IAMs but also on implementing them in an easy-to-use way to motivate secure handling of identity data.
Website	https://credential.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Ait Austrian Institute of Technology GHMB (AT) Consortium: 2. Atos Consulting Canarias SA Unipersonal (ES) 3. Atos IT solutions and services Iberia SL (ES) 4. Atos Spain SA (ES) 5. Etuitus SRL (IT) 6. Eurocloud Europe ASBL (LU) 7. Fraunhofer Gesellschaft Zur Foerderung Der Angewandten forschung E.V. (DE) 8. Hellenic Tellecommunications Organization S.A. OTE AE (Organismos Tilepikoinonion Tis Ellados OTE AE (EL) 9. Infocert Spa (IT) 10. Johann Wolfgang Goethe Universitaet Frankfurt Am Main (DE) 11. Karlstads Universitet (SE) 12. Klughammer GMBH (DE) 13. Lombardia Informatica Spa (IT) 14. Stiftung Secure Information and Communication Technologies (AT) 15. Technische Universitaet Graz (AT)

FutureTrust	
Title	Future Trust Services for Trustworthy Global Transactions (FutureTrust)
Contract details	H2020 Secure Societies Call: H2020-DS-2015-1 Topic code: DS-05-2015 June 2016 / June 2019 - EUR: 6,338,948.89 REA - 700542
Abstract	The FutureTrust project will in particular develop a comprehensive Open Source validation service as well as a scalable preservation service for electronic signatures and will provide components for the eID-based application for qualified certificates across borders, and for the trustworthy creation of remote signatures and seals in a mobile environment. The FutureTrust project will address the need for globally interoperable solutions through (1) basic research with respect to the foundations of trust and trustworthiness, with the aim of developing new, widely compatible trust models or improving existing models, (2) actively driving the standardisation process, and (3) providing Open Source software components and trustworthy services as a functional base for fast adoption of standards and solutions.
Website	https://www.futuretrust.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Ruhr Universität Bochum (DE) Consortium: 2. Arhs Developments SA (LU) 3. A-Sit Plus GMBH (AT) 4. Bundesrechenzentrum GMBH (AT) 5. Bundesverwaltungsambt BVA (DE) 6. ECSEC GMBH (DE) 7. European Electronic Messaging Association AISBL (BE) 8. Giesecke & Devrient Gesellschaft mit Beschrankter Haftung (DE) 9. Informationstechnikzentrum Bund (DE) 10. Law Trusted Third Party Services PTY Ltd (ZA) 11. Ministarstvo Unutrasnjih Poslova Republike Srbije (RS) 12. Multicert – Servicos de Certificacao Electronica SA (PT) 13. Pricewaterhousecoopers Enterprise Advisory SCRL-PWC Enterprise Advisory (BE) 14. Public Service Development Agency (GE) 15. Trustable Limited (UK) 16. Turkiye Bilimsel ve Teknolojik Arastirma Kurumu (TR) 17. University of Southhampton (UK) 18. Zentrum fur Sichere Informationstechnologie – Austria (AT)

OPERANDO	
Title	Online Privacy Enforcement, Rights Assurance and Optimization (OPERANDO)
Contract details	H2020 Secure Societies Call: H2020-DS-2014-1 Topic code: DS-01-2014 May 2015 / May 2018 - EUR: 3,746,037.00 REA - 653704
Abstract	The OPERANDO project will create a platform that will used by independent Privacy Service Providers (PSPs) to provide comprehensive user privacy enforcement in the form of a dedicated online service, called “Privacy Authority”. A key aspect addressed by OPERANDO is the need to simplify privacy for end users, therefore, OPERANDO will support a simple Privacy Dashboard allowing users to specify their preferences.
Website	https://www.operando.eu
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Oxford Computer Consultants Limited (UK) Consortium: 2. Arteevo Technologies Ltd (IL) 3. Fondazione Centro San Raffaele (IT) 4. Fondacion Tecnalia Research & Innovation (ES) 5. Ospedale San Rafaele Srl (IT) 6. Progretti D'Impresa Srl (IT) 7. Romsoft Srl (RO) 8. Stelar Security Technology Law Research UG (DE) 9. Univ. of Piraeus Research Center (EL) 10. Univ. of Southhampton (UK)

PANORAMIX	
Title	Privacy and Accountability in Networks via Optimized Randomized Mix-nets (PANORAMIX)
Contract details	H2020 Secure Societies Call: H2020-DS-2014-1 Topic code: DS-01-2014 September 2015 / September 2018 - EUR: 3,796,625.00 REA - 653497
Abstract	The objective of the PANORAMIX project is the development of a multipurpose infrastructure for privacy-preserving communications. Mix-nets protect not only the content of communications from third parties, but also obscure the exact identity of the senders or receivers of messages, through the use of cryptographic relays. The objectives are (1) building a Mix-Net Infrastructure for Europe, by creating a European mix-network open-source codebase and infrastructure; (2) apply our infrastructure to private electronic voting protocols; (3) apply our infrastructure to privacy-aware cloud data-handling; (4) apply our infrastructure to privacy-preserving messaging.
Website	https://panoramix-project.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Univ. Of Edinburgh (UK) Consortium: 2. Ethniko Diktyo Erevnas Technologias Ae (EL) 3. Ethniko kai Kapodistriako Panepistimio Athinon (EL) 4. Greenhost (NL) 5. Katholieke Universiteit Leuven (BE) 6. Sap SE (DE) 7. Tartu Ulikool (EE) 8. Univ. College London (UK) 9. Vikingco (BE)

PRIVACY FLAG	
Title	Enabling Crowd-sourcing based privacy protection for smartphone applications, websites and Internet of Things deployments (PRIVACY FLAG)
Contract details	H2020 Secure Societies Call: H2020-DS-2014-1 Topic code: DS-01-2014 May 2015 / May 2018 - EUR: 3,142,999.75 REA - 653426
Abstract	Privacy Flag combines crowd sourcing, ICT technology and legal expertise to protect citizen privacy when visiting websites, using smart-phone applications, or living in a smart city. It will enable citizens to monitor and control their privacy with a user friendly solution provided as a smart phone application, a web browser add-on and a public website.It will: (1) develop a highly scalable privacy monitoring and protection solution; (2) develop a global knowledge database of identified privacy risks, together with online services to support companies and other stakeholders in becoming privacy-friendly; (3) collaborate with standardization bodies.
Website	http://privacyflag.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Hellenic Telecommunications Organization S.A. – OTE AE (Organismos Tilepikoinonion tis Ellados OTE AE) (EL) Consortium: 2. Archimede Solutions Sarl (CH) 3. Drustvo za Konsalting, Razvoj I Implementaciju Informacionih I Komunikacionih Tehnologija Dunavnet Doo (RS) 4. Ethniko kai Kapodistraiko Panepistimio Athinon (EL) 5. H W Communications Limited (UK) 6. Institouto Technologias Ypologistonkai Ekdoseon Diofantos (EL) 7. International Association of IT Lawyers (IAITL) Forening (DK) 8. Istituto Italiano per la Privacy (IT) 9. Lulea Tekniska Universitet (SE) 10. Mandat International alias Fondation pour la Cooperation Internationale (CH) 11. Univ. du Luxembourg (LU) 12. Univ. of Bristol (UK) 13. Velti Anonymi Etaireia Proionton Logismikou & Synafon Prionton & Piresion (EL)

ReCRED	
Title	From Real-world Identities to Privacy-preserving and Attribute-based CREDentials for Device-centric Access Control (ReCRED)
Contract details	H2020 Secure Societies Call: H2020-DS-2014-1 Topic code: DS-02-2014 May 2015 – May 2018 - EUR: 4,997,242.00 REA - 653417
Abstract	ReCRED's goal is to promote the user's personal mobile device to the role of a unified authentication and authorization proxy towards the digital world. ReCRED addresses key security and privacy issues such as resilience to device loss, theft and impersonation, via a combination of: i) local user-to-device and remote device-to-service secure authentication mechanisms; ii) multi-factor authentication mechanisms based on behavioral and physiological user signatures not bound to the device; iii) usable identity management and privacy awareness tools; iv) usable tools that offer the ability for complex reasoning of authorization policies through advanced learning techniques.
Website	https://www.recred.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Univ. of Piraeus Research Center (EL) Consortium: 2. Certsign SRL (RO) 3. Consorzio Nazionale Interuniversitario per le Telecomunicazioni (IT) 4. De Productizers BV (NL) 5. Exus Software Ltd (UK) 6. Fundacion Imdea Networks (ES) 7. Studio Professionale Association a Baker &McKenzie (IT) 8. Technologiko Panepistimio Kyprou (CY) 9. Telefonica Investigacion y Desarrollo SA (ES) 10. Univ. Carlos III de Madrid (ES) 11. Upcom BVBA (BE) 12. Verizon Nederland BV (NL) 13. Wedia Limited (EL)

SafeCloud	
Title	Secure and Resilient Cloud Architecture (SafeCloud)
Contract details	H2020 Secure Societies Call: H2020-DS-2014-1 Topic code: DS-01-2014 September 2015 / September 2018 - EUR: 2,150,810.00 REA - 653884
Abstract	SafeCloud will re-architect cloud infrastructures to ensure that data transmission, storage, and processing can be (1) partitioned in multiple administrative domains that are unlikely to collude; (2) entangled with inter-dependencies that make it impossible for any of the domains to tamper with its integrity. Users will have full control over what happens to their data. This will make users less reluctant to manage their personal data online due to privacy concerns and will generate positive business cases for privacy-sensitive online applications such as the distributed cloud infrastructure and medical record storage platform that we address.
Website	http://www.safecloud-project.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Inesc Tec - Instituto De Engenharia De Sistemas e Computadores, Tecnologia e Ciencia (PT) Consortium: 2. Cloud&Heat Technologies Gmbh (DE) 3. Cybernetica As (EE) 4. Inesc Id - Instituto De Engenhariade Sistemas e Computadores, Investigacao e Desenvolvimento em Lisboa (PT) 5. Maxdata Software Sa (PT) 6. Technische Universitaet Muenchen (DE) 7. Universite De Neuchatel (CH)

SpeechXRays	
Title	Multi-channel biometrics combining acoustic and machine vision analysis of speech, lip movement and face (SpeechXRays)
Contract details	H2020 Secure Societies Call: H2020-DS-2014-1 Topic code: DS-02-2014 May 2015 / May 2018 - EUR: 4,102,467.00 REA - 653586
Abstract	The SpeechXRays project will develop a user recognition platform based on voice acoustics analysis and audio-visual identity verification. The vision of the SpeechXRays project is to provide a solution combining the convenience and cost-effectiveness of voice biometrics, achieving better accuracies by combining it with video, and bringing superior anti-spoofing capabilities.
Website	http://www.oberthur.com/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Oberthur Technologies Sa (FR) Consortium: 2. Elliniki Etairia Tilepikoinonion Kai Tilematikon Efarmogon Ae (EL) 3. Foundation For Research And Technology Hellas (EL) 4. Horowitz Biometrics Limited (UK) 5. Institut Mines-Telecom (FR) 6. Institutul National De Cercetare -Dezvoltare Pentru Fizica Si Inginerie Nucleara "Horia Hulubei" (Ifin-Hh) (RO) 7. Realeyes Ou (EE) 8. Siveco Romania Sa (RO) 9. Tech Inspire Ltd (UK) 10. University College London (UK)

TYPES	
Title	Towards transparencY and Privacy in the onlinE advertising businesS (TYPES)
Contract details	H2020 Secure Societies Call: H2020-DS-2014-1 Topic code: DS-01-2014 May 2015 / November 2017 - EUR: 3,992,663.00 REA - 653449
Abstract	TYPES aims to establish a holistic framework of technologies and tools that guarantees both transparency and privacy preservation, gives the end user control upon the amount of information he/she is willing to share, and defines privacy-by-design solutions. TYPES will make it easier to verify whether users' online rights are respected and if personal data is exchanged for a reasonable value-added to users.
Website	http://www.types-project.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Fundacio Barcelona Media (ES) 2. Fundacio Eurecat (ES) Consortium: 3. Asociacion de Usuarios de Internet (ES) 4. Fundacion Imdea Networks (ES) 5. Interactive Advertising Bureau Europe (BE) 6. Nec Europe Ltd (UK) 7. Telefonica Investigacion Y Desarrollo Sa (ES) 8. The Open University (IL) 9. Universidad Carlos Iii De Madrid (ES) 10. Upcom Bvba (BE) 11. Wedia Limited (EL)

VisiOn	
Title	Visual Privacy Management in User Centric Open Environments (VisiOn)
Contract details	H2020 Secure Societies Call: H2020-DS-2014-1 Topic code: DS-01-2014 July 2015 / July 2017 - EUR: 2,748,912.50 REA - 653642
Abstract	Public Administration (PA) authorities are working towards upgrading the level of their online services through new governance models such as the Open Government. This pushes for greater transparency, accountability and innovation aiming at increasing citizen levels of confidence and trust in PA online services. In this context, user data privacy is an important issue. The platform will provide clear visualisation of privacy preferences, relevant threats and trust issues along with an insight into the economic value of user data.
Website	http://www.visioneuproject.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Business-E Spa (IT) Consortium: 2. Atos It Solutions and Services Iberia Sl (ES) 3. Atos Spain Sa (ES) 4. Be Innova Srl (IT) 5. Dimos Athinaion Epicheirisi Michanografisis (EL) 6. Fraunhofer Gesellschaft zur Foerderung Der Angewandten Forschung E.V. (DE) 7. Fundacion para la Investigacion Biomedica del Hospital Universitario la Princesa (ES) 8. Military Medical Academy (BG) 9. Ministero Dello Sviluppo Economico (IT) 10. National Center For Scientific Research "Demokritos" (EL) 11. Ospedale Pediatrico Bambino Gesu (IT) 12. Servicio Madrileno de Salud (ES) 13. Technische Universitat Dortmund (DE) 14. Universita Degli Studi di Trento (IT) 15. Universitaet Koblenz-Landau (DE) 16. University of Brighton (UK) 17. Velti Anonymi Etaireia Proionton Logismikou & Synafon Prionton & Piresion (EL)

ISF projects

The above projects are complemented by capacity-building projects funded by the Internal Security Fund Programme. Please note that ISF projects classification might differ from the taxonomy presented in this document. Visit ec.europa.eu/home-affairs/financing/fundings/security-and-safeguarding-liberties/internal-security-fund-police_en for more information on ISF projects.

Pilot programme for data exchange of the Passenger Information Units	
Title	Pilot programme for data exchange of the Passenger Information Units
Project number	HOME/2014/ISFP/AG/LAWX/7150
Contract details	€ 1,153,318.68
Consortium (prone to modification in case of GA amendment)	Coordinator: Ministry Of Interior Consortium: State Agency for National Security (BG); Mykolas Romeris University (LT); General Inspectorate of the Romanian Border Police (RO); General Directorate of Police (ES); Polícia Judiciária (PT)

6.3.3 Cyber crime

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Cyber crime	CAMINO CAPER COCKPITCI COURAGE CWIT CYBERROAD E-CRIME EKSISTENZ ESCORTS HYRIM PREEMPTIVE SCOUT SERSCIS SPARKS

ISF projects

The above projects are complemented by capacity-building projects funded by the Internal Security Fund Programme. Please note that ISF projects classification might differ from the taxonomy presented in this document. Visit ec.europa.eu/home-affairs/financing/fundings/security-and-safeguarding-liberties/internal-security-fund-police_en for more information on ISF projects.

Strenghening European Network of Excellence in cybercrime - SENTER	
Title	Strenghening European Network of Excellence in cybercrime - SENTER
Project number	HOME/2014/ISFP/AG/CYBR/7170
Contract details	€ 1,779,164.01
Consortium (prone to modification in case of GA amendment)	Coordinator: Mykolas Romeris University Consortium: Lithuanian Cybercrime Center of Excellence, Ekonomines konsulateijos ir tyrimai, Masaryk University, KU Leuven, french cybercrime centre of Excellence, Tallinn University of Technology, University of Applied Science Albstad Sigmaringen, International Cyber Investigation Training Academy, Foundation for Research and Technology Hellas, Jozef Stefan Institute

6.4 Crime

6.4.1 Organised crime

PROTON	
Title	Modelling the PRocesses leading to Organised crime and TerrOrist Networks (PROTON) ***This project also corresponds to the category 'Terrorist threats'***
Contract details	H2020 Secure Societies Call: H2020-FCT-2015 Topic code: FCT-16-2015 October 2016 / October 2019 - EUR: 4,094,811.50 REA - 699824
Abstract	PROTON aims at improving existing knowledge on the processes of recruitment to organised crime and terrorist networks (OCTN) through an innovative integration between social and computational sciences. PROTON has three objectives: (1) investigate the social, psychological and economic factors leading to OCTN; (2) develop PROTON-S, agent-based modelling (ABM) simulations of the effects of different societal and environmental changes on OCTN; (3) develop PROTON Wizard, a software tool embedding the results of the ABM simulations. PROTON's impact will improve the quality of prevention policies on OCTN, providing at the same time significant innovations in the social, technological and computational sciences.
Website	https://www.projectproton.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Univ. Cattolica del Sacro Cuore (IT) Consortium: 2. Brottsforebyggande radet (SE) 3. Comune di Palermo (IT) 4. Consiglio Nazionale Delle Ricerche (IT) 5. European Crime Prevention Network (BE) 6. European Police Office Europol (NL) 7. Fraunhofer Gesellschaft zur Foerderung der Angewandten Forschung EV (DE) 8. Friedrich-Alexander-Universitaet Erlangen Nuernberg (DE) 9. IBM Research GMBH (CH) 10. Itti SP Zoo (PL) 11. Ministerie van Veiligheid en Justitie (NL) 12. Ministero dell'Interno (IT) 13. Stichting VU (NL) 14. The Chancellor, Masters and Scholars of the University of Cambridge (UK) 15. The Hebrew University of Jerusalem (IL) 16. The University System of Maryland Foundation, inc. (US) 17. Univ. Degli Studi di Palermo (IT) 18. Univ. Degli Studi di Pavia (IT) 19. Univ. de Barcelona (ES) 20. Univ. de Naumur ASBL (BE) 21. Youris.com (BE)

TAKEDOWN	
Title	Understand the Dimensions of Organised Crime and Terrorist Networks for Developing Effective and Efficient Security Solutions for First-line-practitioners and Professionals (TAKEDOWN) ***This project also corresponds to the category 'Terrorist threats'.***
Contract details	H2020 Secure Societies Call: H2020-FCT-2015 Topic code: FCT-16-2015 September 2016 / September 2019 - EUR: 3,146,375.00 REA - 700688
Abstract	TAKEDOWN aims at generating insights on OC/TN. TAKEDOWN Model describes social, psychological, economic aspects as well as further dimensions, activities and response approaches. The TAKEDOWN Open Information Hub targets first-line-practitioners and provides modular solutions and inductive materials. The public web platform helps individuals to navigate to the right third party reporting and help lines including an innovative crowd reporting application to report digital OC/TN cases. With this multi-level approach, TAKEDOWN will force a better understanding of OC/TN, develop modern approaches and solutions, and will finally lead to a more efficient and effective response on OC/TN and strengthen social cohesion at pan-European level.
Website	https://www.takedownproject.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Synyo Gmbh (AT) Consortium: 2. Agenfor Italia (IT) 3. Agentur Fur Europaische Integration Und Wirtschaftliche Entwicklung Verein (AT) 4. Ayuntamiento De Valencia (ES) 5. Center For The Study Of Democracy (BG) 6. Ceske Vysoke Uceni Technicke V Praze (CZ) 7. Cloud Security Alliance (Europe) Lbg (UK) 8. Eidgenoessische Technische Hochschule Zuerich (CH) 9. Fundacion Euroarabe De Altos Estudios (ES) 10. Institutul Roman Pentru Actiune, Instruire Si Cercetare In Domeniul Pacii - Peace Action, Training & Research Inst Of Romania (RO) 11. Leuven Security Excellence Consortium L-Sec Vzw (BE) 12. Middlesex University Higher Education Corporation (UK) 13. Technion - Israel Institute Of Technology (IL) 14. Technische Universitat Darmstadt (DE) 15. Universitat Autonoma De Barcelona (ES) 16. University Of Leeds (UK) 17. Vysoka Skola Bezpecnostneho Manazerstva V Kosiciach Neziskova Organizacia (SK) 18. Wyzsza Szkola Policji W Szczytnie (PL)

6.4.2 Corruption

No dedicated research projects or studies have been carried out in the area of corruption.

6.4.3 Drug detection

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Drug detection	CUSTOM DIRAC DOGGIES LINKSCH LOTUS ROSFEN SALIANT SNIFFER SNIFFLES SNOOPY

These projects have been complemented by the following H2020 projects:

DrugStop	
Title	Drug detection for personal protection (DrugStop)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2015 Topic code: DRS-17-2015-1 November 2015 / March 2016 - EUR: 50.000,00 EASME - 698568
Abstract	DrugStop is capable of detecting if drugs have been added to a drink. The detection occurs as a result of combining advanced spectroscopic techniques with advanced data processing. This device is marketed towards two classes of end-users, establishment owners and the individual user.
Website	
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. D Management APS (DK)

microMole	
Title	Sewage monitoring system for tracking synthetic drug laboratories (microMole)
Contract details	H2020 Secure Societies Call: H2020-FCT-2014 Topic code: FCT-05-2014 September 2015 / September 2018 - EUR: 4,992,866.33 REA - 653626
Abstract	The aim of this project is to design, develop and test a prototype of a system for legal recording, retrieving and monitoring operations of ATS and ATS precursor laboratories in urban areas. The sensor system will be installed within the sewage system and will track waste associated to ATS production. Criminal investigators and forensic specialists will use the system in case of: (1) initial general suspicion of ATS production in a certain area; (2) strong suspicions that in a well confined area ATS is being produced.
Website	http://micromole.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Politechnika Warszawska (PL) Consortium: 2. Blue Technologies Sp Zoo (PL) 3. Bundeskriminalamt (DE) 4. Capsenze Handelsbolag (SE) 5. Centralne Laboratorium Kryminalistyczne Policji (PL) 6. Fraunhofer Gesellschaft zur Foerderung der Angewandten Forschung EV (DE) 7. JGK Tech Ehf (IS) 8. Stichting Katholieke Universiteit Brabant (NL) 9. Universitaet der Bundeswehr Muenchen (DE) 10. Univ. Gent (BE) 11. Univ. Lyon 1 Claude Bernard (FR)

ISF projects

The above projects are complemented by capacity-building projects funded by the Internal Security Fund Programme. Please note that ISF projects classification might differ from the taxonomy presented in this document. Visit ec.europa.eu/home-affairs/financing/fundings/security-and-safeguarding-liberties/internal-security-fund-police_en for more information on ISF projects.

CSW: Cross Border Surveillance on Drugs and Firearms	
Title	CSW: Cross Border Surveillance on Drugs and Firearms ***This project also corresponds to the category 'Firearms'.***
Project number	HOME/2015/ISFP/AG/TDFX/8733
Contract details	€ 615,084.47
Consortium (prone to modification in case of GA amendment)	Coordinator: THE NATIONAL POLICE OF THE NETHERLANDS Consortium: An Garda Siochana (IRL) - BKA (DE) - Federal Police (BE) - NBI (FI) - EKO Cobra (AT) - Gendarmerie Nationale (FR) - Carabinieri (IT)

Joint investigation to fight trafficking in drugs and firearms with the main focus on international airports within and also into the EU	
Title	Joint investigation to fight trafficking in drugs and firearms with the main focus on international airports within and also into the EU *This project also corresponds to the category 'Firearms'.*
Project number	HOME/2015/ISFP/AG/TDFX/8739
Contract details	€ 633,578.78
Consortium (prone to modification in case of GA amendment)	Coordinator: Bundeskriminalamt Consortium: Police (CZ) - Police (KO)

Turning (Detection of drugs trafficking & drugs production: Train the trainers course, course curriculum, toolkit & exchange of best practices)	
Title	Turning (Detection of drugs trafficking & drugs production: Train the trainers course, course curriculum, toolkit & exchange of best practices)
Project number	HOME/2015/ISFP/AG/TDFX/8746
Contract details	€ 429,094.50
Consortium (prone to modification in case of GA amendment)	Coordinator: Federal Police Germany Consortium: BKA (DE) - NICC (BE)

6.4.4 Firearms

No dedicated research projects or studies have been carried out in the area of firearms.

ISF projects

A number of projects were funded by the Internal Security Fund Programme. Please note that ISF projects classification might differ from the taxonomy presented in this document. Visit ec.europa.eu/home-affairs/financing/fundings/security-and-safeguarding-liberties/internal-security-fund-police_en for more information on ISF projects.

Turning (Detection of drugs trafficking & drugs production: Train the trainers course, course curriculum, toolkit & exchange of best practices)	
Title	Turning (Detection of drugs trafficking & drugs production: Train the trainers course, course curriculum, toolkit & exchange of best practices)
Project number	HOME/2015/ISFP/AG/TDFX/8746
Contract details	€ 429,094.50
Consortium (prone to modification in case of GA amendment)	Coordinator: Federal Police Germany Consortium: BKA (DE) - NICC (BE)

6.4.5 Support to law enforcement

LAW-TRAIN	
Title	Mixed-reality environment for training teams in joint investigative interrogation-Intelligent interrogation training simulator (LAW-TRAIN) ***This project also corresponds to the category 'Training and Networking'.***
Contract details	H2020 Secure Societies Call: H2020-FCT-2014 Topic code: FCT-07-2014 May 2015 – May 2018 - EUR: 5,095,687.00 REA - 653587
Abstract	LAW-TRAIN applies an interdisciplinary approach for international criminal interrogations. It unifies the methodology for such interrogations and will develop a distributed mixed-reality gaming platform that will provide training opportunities to teams of international interrogators. LAW-TRAIN builds on advanced technologies of virtual and augmented reality to allow law enforcement personnel from different countries located in different sites to conduct a collaborative investigative interrogation of one or more suspects. The LAW-TRAIN engine is designed as a generic engine that will enable development of scenarios for other types of illegal activities as well as other cross-border teamwork training.
Website	http://www.law-train.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Bar Ilan University (IL) Consortium: 2. Compedia Software & Hardware Development Ltd (IL) 3. De Federale Overheidsdienst Justitie – Le Service Public Federal Justice (BE) 4. Inesc ID – Instituto de Engenhariade Sistemas e ComputadoresInvestigacao e Desenvolvimento em Lisboa (PT) 5. Inspectoratul General al Politei Romane (RO) 6. Katholieke Univesiteit Leuven (BE) 7. Ministério da Justiça (PT) 8. Ministerio del Interior (ES) 9. Ministry of Public Security (IL) 10. Optimazacion Orientada a la Sostenibilidad SL (ES) 11. Usecon The Usability Consultants GMBH (AT)

NOSY	
Title	New Operational Sensing sYstem (NOSY) ***This project also corresponds to the category 'Organised crime'.***
Contract details	H2020 Secure Societies Call: H2020-FCT-2014 Topic code: FCT-05-2014 September 2015 / September 2018 - EUR: 4,198,684.63 HOME - 653839
Abstract	The NOSY project is focused on the development of a miniaturized yet sensitive platform, for the detection of illicit or suspicious substances. The platform includes the development of a miniature sensing device, a monitoring station and communication infrastructure for LEA network integration. In addition there will be the development of complete devices for both stand alone and embeddable monitoring and recording. Accurate and unambiguous identification of substances is fundamental to allow LEA to intervene with the most suitable action or counter measure.
Website	https://nosy-project.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Aero Sekur S.p.A.(IT) Consortium: 2. Bundesministerium des Innern (DE) 3. Centre National de La Recherche Scientifiques CNRS (FR) 4. Cranfield University (UK) 5. GMVIS Skysoft SA (PT) 6. Instituto Affari Internazionali (IT) 7. Ministerie de l'Interieur (FR) 8. Ministerio da Aministracao Interna (PT) 9. Ministero Della Difesa (IT) 10. Resi Informatica Spa (IT) 11. Sensichips Srl (IT) 12. Synectika Research and Consulting Ltd (UK) 13. Universite de Technologie de Copiegne (FR) 14. Univ. Of Leicester (UK) 15. Xavitech AB (SE)

6.5 Radicalisation

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 project is described.

Research sub-category	FP7 projects
Radicalisation	IMPACT EUROPE

ISF projects

The above projects are complemented by capacity-building projects funded by the Internal Security Fund Programme. Please note that ISF projects classification might differ from the taxonomy presented in this document. Visit ec.europa.eu/home-affairs/financing/fundings/security-and-safeguarding-liberties/internal-security-fund-police_en for more information on ISF projects.

"Bounce Resilience Training, Network and Evaluation – STRESAVIORA II (strengthening resilience against violent radicalisation)"	
Title	"Bounce Resilience Training, Network and Evaluation – STRESAVIORA II (strengthening resilience against violent radicalisation)"
Project number	HOME/2014/ISFP/AG/RADX/7541
Contract details	€ 706,785.80
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Service Public Federal Interieur Consortium: 2. Radar Europe B.V. - NL 3. European Forum for Urban Security - FR

"Countering Propaganda by Narration Towards Anti-Radical Awareness (CONTRA)"	
Title	"Countering Propaganda by Narration Towards Anti-Radical Awareness (CONTRA)"
Project number	HOME/2014/ISFP/AG/RADX/7532
Contract details	€ 731,098.04
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Federal Criminal police office Germany Consortium: 2. Federal Ministry Of The Interior – Federal Agency For State Protection And Counter Terrorism – AT 3. National Coordinator for Security and Counterterrorism – Ministry of Security and Justice – NL 4. Universität zu Köln – DE 5. Universität Mannheim – DE 6. Universidad Pablo de Olavide – ES 7. Ufuq e.V. – DE

"FIRST LINE – Practitioners Dealing with Radicalization Issues - Awareness Raising and Encouraging Capacity Building in the Western Balkan Region"	
Title	"FIRST LINE – Practitioners Dealing with Radicalization Issues - Awareness Raising and Encouraging Capacity Building in the Western Balkan Region"
Project number	HOME/2014/ISFP/AG/RADX/7533
Contract details	€ 853,805.62
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Ministry of the interior of the Republic of Slovenia, Police Consortium: 2. Federal Ministry of the Interior, Federal Agency for State Protection and Counter Terrorism (BMI- BV) -AT 3. Belgian Federal Police (BE-FP) – BE 4. Ministry of the Interior of the Republic of Croatia (MUP RH) - HR 5. Police of the Czech Republic, Organized Crime Division, Criminal Police and Investigation Service (CZ P) - CZ 6. Directorate for Coordination of Police Bodies of Bosnia and Herzegovina (DKPT - BiH) 7. State Investigation and Protection Agency of Bosnia and Herzegovina (SIPA BiH) 8. Ministry of Security of Bosnia and Herzegovina (MS BiH) - Ministry of Security of Bosnia and Herzegovina (MS BiH) 9. Ministry of the Interior of Montenegro, Police Directorate, (MoI MNE) MONTENEGRO 10. Ministry of the Interior of the Republic of Kosovo, Kosovo Police (MPB RK) - KOSOVO 11. General Directorate of Albanian Police, (GDSP) – ALBANIA 12. Ministry of the Interior of Macedonia, Security and Counterintelligence Service (MOI UBK) -MACEDONIA 13. Ministry of the Interior of the Republic of Serbia (MoI RS) – SERBIA

"Local institutions against extremism LIAISE II"	
Title	"Local institutions against extremism LIAISE II"
Project number	HOME/2014/ISFP/AG/RADX/7193
Contract details	€ 618,611.85
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. European Forum For Urban Security Consortium: 2. Ufuq e.V. DE 3. City of Augsburg - DE 4. Department de Justicia – Generalitat de Catalunya - ES 5. City of Alexandroupolis - GREECE 6. City of Bagneux - FR 7. City of Bordeaux - FR 8. BRAVVO asbl; City of Brussels - BE 9. City of Dusseldorf - DE 10. City of L'Hospitalet -ES 11. City of Liège - BE 12. City of Malmo - SE 13. City of Paris - FR 14. City of Reggio Emilia - IT 15. City of Sarcelles- FR 16. City of Setubal - PT 17. City of Toulouse - FR 18. Forum Belge pour la Sécurité Urbain - BE 19. Forum Français pour la Sécurité Urbain - FR 20. Forum Italiano per la Sicurezza Urbana - IT 21. Confederation of European Probation – NL 22. City of Bologna - IT 23. City of Essen - DE 24. German European Forum for Urban security DUFUS - DE

"Semantic analysis against foreign fighters recruitment online networks (SAFFRON)"	
Title	"Semantic analysis against foreign fighters recruitment online networks (SAFFRON)"
Project number	HOME/2014/ISFP/AG/RADX/7540
Contract details	€ 588,805.06
Consortium (prone to modification in case of GA amendment)	Coordinator: Viseo technologies SAS Consortium: Holmes Semantic Solutions SAS(FR); Politecnico di Torino (IT); Academia Nationala de Infurmatii "Mihai Viteazul" (RO); DEMETRA(IT)

Syria Strategic Communication Advisory Team (SSCAT)	
Title	Syria Strategic Communication Advisory Team (SSCAT)
Project number	7013
Contract details	€ 1,000,000.00
Consortium (prone to modification in case of GA amendment)	Coordinator: HOME AFFAIRS

6.6 Supply Chain

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Supply chain	CASSANDRA CORE IPATCH ISTIMES LOGSEC OSMOSIS SAFEPOST SECURECHAINS

These projects have been complemented by the following H2020 projects:

MITIGATE	
Title	Multidimensional, IntegraTed, rIsk assessment framework and dynamic, collaborative Risk ManaGement tools for critical information infrAstrucTurEs (MITIGATE)
Contract details	H2020 Secure Societies Call: H2020-DS-2014-1 Topic code: DS-06-2014 September 2015 / March 2018 - EUR: 3,109,794.50 CNECT - 653212
Abstract	MITIGATE will introduce, integrate, validate and commercialize a RM system, which will empower stakeholders' collaboration for the identification, assessment and mitigation of risks associated with cyber-security assets and SC processes. This collaborative system will boost transparency in risk handling, while enabling the generation of unique evidence about risk assessment and mitigation. At the heart of the RM system will be an open simulation environment enabling stakeholders to simulate risks and evaluate risk mitigation actions. This environment will allow users to model, design, execute and analyze attack-oriented simulations. Emphasis will be on the estimation of cascading effects in SCs, as well as on the prediction of future risks.
Website	https://www.mitigateproject.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Fraunhofer Gesellschaft zur foerderung der Angewandten Forschung EV (DE) Consortium: 2. Ait Austrian Institute of Technology GMBH (AT) 3. Autorita Portuale di Ravenna (IT) 4. DBH Logisitcs IT AG (DE) 5. Fondazione Instituto Tecnico Superiore Mobilita Sostenibile nei Settoritrasporti Marittimi e della Pesca-Accademia Italiana della Marina Merc (IT) 6. Fundacion de la Comunidad Valenciana para la investigacion, Promocion y Estudios Comerciales de Valenciaport (ES) 7. Funacion Instituto Portuario de Estudios y Cooperacion de la Comunidad Valenciana (ES) 8. Maggioli Spa (IT) 9. Piraeus Port Authority SA (EL) 10. Singularlogic Anonymi Etaireia Pliroforiakon Systimaton kai Efarmogon Pliroforikis (EL) 11. Singularlogic Romani Computer Applications SRL (RO) 12. Univ. of Brighton (UK) 13. Univ. of Piraeus Research Center (EL)

6.7 Financial crime

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Financial crime	COMFIN EUSECON HEMOLIA PARSIFAL VALUESEC

These projects have been complemented by the following H2020 projects:

DANTE	
Title	Detecting and ANalysing TErrorist-related online contents and financing activities (DANTE)
Contract details	H2020 Secure Societies Call: H2020-FCT-2015 Topic code: FCT-06-2015 September 2016 / March 2019 - EUR: 4,998,527.88 HOME - 700367
Abstract	DANTE will deliver effective, efficient and automated data mining, analytics solutions and an integrated system to detect, retrieve, and analyse huge amounts of heterogeneous and complex multimedia and multi-language terrorist-related contents from both the Surface and the Deep Web, including the Dark Nets. The ultimate goal is to discover (by "connecting the dots"), analyse and monitor potential terrorist-related activities and people, with focus on online fund raising activities, but also considering propaganda, training and disinformation. DANTE's goals are achievable by exploiting, improving and integrating several existing data mining and analysis tools.
Website	http://www.h2020-dante.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Engineering 0 Ingegneria Informatica Spa (IT) Consortium: 2. Agnito SL (ES) 3. AIT Austrian Institute of Technology GMBH (AT) 4. Ciaotech SRL (IT) 5. Ethniko Kentro Erevnas Kai Technologikis Anaptyxis (EL) 6. Expert System Iberia SL (ES) 7. Expert System S.P.A. (IT) 8. Fundacion Deusto (ES) 9. Home Office (UK) 10. Katholieke Universiteit Leuven (BE) 11. Ministério da Justica (PT) 12. Ministerio Del Interior (ES) 13. Ministerio Della Difesa (IT) 14. Pragsis Technologies SL (ES) 15. Promt GMBH (DE) 16. RISSC – Centro Ricerche e Studi Susicurezza e Criminalita (IT) 17. Trilateral Research Ltd (UK) 18. United Techologies Research CentreIreland, Limited (IE) 19. Vocapia Research (FR)

ISF projects

The above projects are complemented by capacity-building projects funded by the Internal Security Fund Programme. Please note that ISF projects classification might differ from the taxonomy presented in this document. Visit ec.europa.eu/home-affairs/financing/fundings/security-and-safeguarding-liberties/internal-security-fund-police_en for more information on ISF projects.

INVENTORY, OUTLOOK, AND ASSESSMENT OF EMERGING ENVIRONMENTAL CRIMES AGAINST WATER IN EUROPE	
Title	INVENTORY, OUTLOOK, AND ASSESSMENT OF EMERGING ENVIRONMENTAL CRIMES AGAINST WATER IN EUROPE
Project number	HOME/2014/ISFP/AG/EFCE/7241
Contract details	€ 314,868.33
Consortium (prone to modification in case of GA amendment)	Coordinator: Higher Institute On Territorial Systems For Innovation Consortium: RiSSC- Centro Ricerche e Studi su Sicurezza e Criminalità (IT); The Regional Environmental Centre for Central and Eastern Europe (REC) (IntOrg based in HU); Faculty of Criminal Justice and Security - University of Maribor (SI); Universidade da Coruña (ES)

7. Border security and customs

7.1 Aviation security

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Aviation security	COPRA EUROSKY GAMMA SUBITO TASS XP-DITE

These projects have been complemented by the following H2020 projects:

FLYSEC	
Title	Optimising time-to-FLY and enhancing airport SECurity (FLYSEC)
Contract details	H2020 Secure Societies Call: H2020-DRS-2014 Topic code: DRS-16-2014 May 2015 / May 2018 - EUR: 4,089,500.00 HOME - 653879
Abstract	The FLYSEC project aims to develop and demonstrate an innovative integrated and end-to-end airport security process for passengers, enabling a guided and streamlined procedure from the landside to airside and into the boarding gates, and offering an operationally validated concept for end-to-end aviation security. FLYSEC integrates new technologies on video surveillance, intelligent remote image processing and biometrics combined with big data analysis, open-source intelligence and crowdsourcing.. Besides more efficient background checks and passenger profiling, FLYSEC aims to implement a seamless risk-based security process within FLYSEC aforementioned technologies with behavioural analysis and innovative cognitive algorithms.
Website	http://www.fly-sec.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. National Center for Scientific Research 'Demokritos' (EL) Consortium: 2. CG Smartech Ltd (IL) 3. EASC ev (DE) 4. Elbit Systems Ltd (IL) 5. Embry-Riddle Aeronautical Deutschland GMBH (DE) 6. Emza Visual sense Ltd (IL) 7. Epsilon Internasional Anonymi Etaireia Meleton Kai Symvoulon (Epsiolon International SA) (EL) 8. Exodus Anonymos Etaireia Pliroforikis (EL) 9. ICTS (UK) Ltd (UK) 10. Societe de l'Aeroport de Luxembourg SA (LU) 11. Universite du Luxembourg (LU)

SAPIENT	
Title	Satcom and terrestrial architectures improving performance, security and safety in ATM (SAPIENT)
Contract details	Exploratory Research Call: H2020-SESAR-2015-1 Topic code: Sesar-08-2015 April 2016 / October 2017 - EUR: 859.500,00 RIA - 699328
Abstract	The present SAPIENT proposal addresses a new innovative application focusing exploitation of the synergies of Communications and Navigation technologies and the 4D trajectory management concept. The SAPIENT project aims at supporting the Technology Communication and Navigation roadmaps and the stakeholders roadmaps for the Air-Ground datalinks SAPIENT project is strictly linked to the current phase of SESAR, taking into account the analysis and the definition activities carried out in the WP15 CNS and, in particular, the results of P15.2.4 and P15.2.6. In addition, taking into account the SESAR work on Remote Piloted Aircraft System (see P15.2.4 task 105 and Medale project), the SAPIENT system aims at improving the performance of the RPAS Command, Control and Communication satellite datalink, that is recognized as one of the major technical gaps for the RPAS integration in the civilian airspace.
Website	http://sapient-project.eu/h2020/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Thales Alenia Space Italia Spa (IT) Consortium: 2. Business Integration Partners Spa (IT) 3. Frequentis Ag (AT) 4. Sita Information Networking Computing Bv (NL) 5. Universita Di Pisa (IT) 6. Viasat Antenna Systems Sa (CH)

ISF projects

The above projects are complemented by capacity-building projects funded by the Internal Security Fund Programme. Please note that ISF projects classification might differ from the taxonomy presented in this document. Visit ec.europa.eu/home-affairs/financing/fundings/security-and-safeguarding-liberties/internal-security-fund-police_en for more information on ISF projects.

INVENTORY, OUTLOOK, AND ASSESSMENT OF EMERGING ENVIRONMENTAL CRIMES AGAINST WATER IN EUROPE	
Title	INVENTORY, OUTLOOK, AND ASSESSMENT OF EMERGING ENVIRONMENTAL CRIMES AGAINST WATER IN EUROPE
Project number	HOME/2014/ISFP/AG/EFCE/7241
Contract details	€ 314,868.33
Consortium (prone to modification in case of GA amendment)	Coordinator: Higher Institute On Territorial Systems For Innovation Consortium: RiSSC- Centro Ricerche e Studi su Sicurezza e Criminalità (IT); The Regional Environmental Centre for Central and Eastern Europe (REC) (IntOrg based in HU); Faculty of Criminal Justice and Security - University of Maribor (SI); Universidade da Coruña (ES)

AIRPOL III	
Title	AIRPOL III
Project number	HOME/2015/ISFP/AG/AIRP/0001
Contract details	€ 474,610.20
Consortium (prone to modification in case of GA amendment)	Coordinator: Swedish Police Authority - Police Region Stockholm

7.2 Maritime security

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Maritime security	AEROCEPTOR AMASS CLOSEYE CONTAIN EU-CISE 2020 I2C OPERAMAR PERSEUS PROMERC SEABILLA SECRONIC SUPPORT TRITON WIMAAS

These projects have been complemented by the following H2020 projects:

ALFA	
Title	Advanced Low Flying Aircrafts Detection and Tracking (ALFA)
Contract details	H2020 Secure Societies Call: H2020-BES-2015 Topic code: BES-04-2015 January 2017 / December 2019 - EUR 4,613,831 REA - 700002
Abstract	Bridging the drone detection-capability gap by improving situational awareness through the detection of LSS (Low, Small and Slow) manned and unmanned aircraft. Use of heterogeneous, easy-to-deploy mobile sensors based on several novel technologies; sensor data in combination with existing sources of information using evolved data fusion to provide accurate positional data for targets, air vehicle type and reliable prediction of its landing site. Information is communicated to the regional law enforcement units using secure communication links and a mobile device application, enabling improved reaction time.
Website	https://alfa-h2020.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Echnikon Forschungs- und Planungsgesellschaft MBH (AT) Consortium 2. Atos Spain SA (ES) 3. Engineering - Ingegneria Informatica SPA (IT) 4. INOV INESC Inovacao - Instituto de Novas Tecnologias (PT) 5. Ministerio da Administracao Interna (PT) 6. Ministerio del Interior (ES) 7. Nederlandse Organisatie voor Toegepast Natuurwetenschappelijk Onderzoek (TNO) (NL) 8. Technische Universitat Braunschweig (AT) 9. Thales Nederland BV (NL)

RANGER	
Title	RAdars for loNG distance maritime surveillancE and SaR opeRations (RANGER)
Contract details	H2020 Secure Societies Call: H2020-BES-2015 Topic code: BES-01-2015 May 2016 / November 2019 - EUR: 7,992,312.50 HOME - 700478
Abstract	RANGER combines innovative radar technologies with technological solutions for early warning, in view of delivering a surveillance platform offering detection, recognition, identification and tracking of suspicious vessels, capabilities exceeding current radar systems.
Website	https://ranger-project.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Exus Software Ltd (UK) Consortium: 2. Diginext Sarl (FR) 3. Institute of Communication and computer Systems (EL) 4. Laurea-Ammattikorkeakoulou OY (FI) 5. Leonardo – Societa per Azioni (IT) 6. Ministere de l'Environnement, de l'Energie et de la Mer (FR) 7. Ministro of National Defence, Greece (EL) 8. NATO Science and Technology Organisation (BE) 9. Tecnische Universitaet Dresden (DE) 10. Telesto Technologies Pliroforikis kai Epikoinonion epe (EL)

SafeShore	
Title	System for detection of Threat Agents in Maritime Border Environment (SafeShore)
Contract details	H2020 Secure Societies Call: H2020-BES-2015 Topic code: BES-02-2015 May 2016 / November 2018 - EUR: 5,133,582.50 HOME - 700643
Abstract	The objective of the SafeShore project is to cover existing gaps in coastal border surveillance, increasing internal security by preventing cross-border crime such trafficking in human beings and the smuggling of drugs. It is designed to be integrated with existing systems and create a continuous detection line along the border. In particular, the small Remotely Piloted Aircraft Systems that are endangering coasts can be detected.
Website	http://safeshore.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Ecole Royale Militaire - Koninklijke Militaire School (BE) Consortium: 2. Dr Frucht Systems Ltd (IL) 3. Institutul De Optoelectronica Sa (RO) 4. Ministry Of Public Security (IL) 5. Optix Ad (BG) 6. Politiezone: De Panne - Koksijde – Nieuwpoort (BE) 7. Queen Mary University Of London (UK) 8. Serviciul De Protectie Si Paza (RO) 9. Tg Drives Sro (CZ) 10. Universita Del Salento (IT) 11. Uti Grup Sa (RO)

ISF projects

The above projects are complemented by capacity-building projects funded by the Internal Security Fund Programme. Please note that ISF projects classification might differ from the taxonomy presented in this document. Visit ec.europa.eu/home-affairs/financing/fundings/security-and-safeguarding-liberties/internal-security-fund-police_en for more information on ISF projects.

Emergency assistance covering staff related costs in order to ensure a high level domain awareness of the severely affected Eastern Aegean EU external borders and to minimize the losses of human lives at sea	
Title	Emergency assistance covering staff related costs in order to ensure a high level domain awareness of the severely affected Eastern Aegean EU external borders and to minimize the losses of human lives at sea
Project number	HOME/2014/ISFB/AG/EMAS/0002
Contract details	€ 2,220,000.00
Consortium (prone to modification in case of GA amendment)	Coordinator: Hellenic Coast Guard

Emergency assistance for the procurement of Search & Rescue Equipment to avert losses of migrants' life at sea	
Title	Emergency assistance for the procurement of Search & Rescue Equipment to avert losses of migrants' life at sea
Project number	HOME/2014/ISFB/AG/EMAS/0003
Contract details	€ 486,000.00
Consortium (prone to modification in case of GA amendment)	Coordinator: Hellenic Coast Guard

Service of first aid during search and rescue at sea - SAR operations of Naval Forces stationed in Lampedusa as to ensure healthcare assistance to migrants crossing the Strait of Sicily - III (SAR Operations III)	
Title	Service of first aid during search and rescue at sea - SAR operations of Naval Forces stationed in Lampedusa as to ensure healthcare assistance to migrants crossing the Strait of Sicily - III (SAR Operations III)
Project number	HOME/2014/ISFB/AG/EMAS/0005
Contract details	€ 492,408.00
Consortium (prone to modification in case of GA amendment)	Coordinator: Italian Ministry of Interior Consortium: Fondazione Corpo Italiano di Soccorso dell'Ordine di Malta C.I.S.O.M. (IT)

Service of first aid during search and rescue at sea - SAR operations of Naval Forces stationed in Lampedusa as to ensure healthcare assistance to migrants crossing the Strait of Sicily - IV (SAR Operations IV)	
Title	Service of first aid during search and rescue at sea - SAR operations of Naval Forces stationed in Lampedusa as to ensure healthcare assistance to migrants crossing the Strait of Sicily - IV (SAR Operations IV)
Project number	HOME/2015/ISFB/AG/EMAS/0002
Contract details	€ 529,965.00
Consortium (prone to modification in case of GA amendment)	Coordinator: Italian Ministry of Interior Consortium: Fondazione Corpo Italiano di Soccorso dell'Ordine di Malta C.I.S.O.M. (IT)

Strengthening of the first reception response to new arrivals on the Aegean islands and in the region of Evros in Greece. New Arrivals Intervention – phase II	
Title	Strengthening of the first reception response to new arrivals on the Aegean islands and in the region of Evros in Greece. New Arrivals Intervention – phase II
Project number	HOME/2014/ISFB/AG/EMAS/0008
Contract details	€ 1,429,700.15
Consortium (prone to modification in case of GA amendment)	Coordinator: UNHCR Consortium: ICMC (EL), METAction (EL)

Emergency assistance covering staff related costs in order to ensure a high level domain awareness of the severely affected Eastern Aegean EU external borders and to minimize the losses of human lives at sea	
Title	Emergency assistance covering staff related costs in order to ensure a high level domain awareness of the severely affected Eastern Aegean EU external borders and to minimize the losses of human lives at sea
Project number	HOME/2014/ISFB/AG/EMAS/0002
Contract details	€ 2,220,000.00
Consortium (prone to modification in case of GA amendment)	Coordinator: Hellenic Coast Guard

7.3 Land border security

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Land border security	EWISA MOBILEPASS OPARUS SUNNY TALOS

These projects have been complemented by the following H2020 projects:

iBorderCtrl	
Title	Intelligent Portable ContROl SyStem (iBorderCtrl)
Contract details	H2020 Secure Societies Call: H2020-BES-2015 Topic code: BES-05-2015 September 2016 / September 2019 EUR: 4,501,877.50 REA - 700626
Abstract	iBorderCtrl envisages to enable faster thorough border control for third country nationals crossing the borders of EU, with technologies that adopt the future development of the Schengen Border Management. The project will present a mixture of an enhanced, voluntary form of a Registered Traveller Programme and an auxiliary solution for the Entry/Exit System based on involving bona fide travellers. iBorderCtrl designs and implements a system that adopts mobility concepts and consists of a two-stage procedure, designed to reduce cost/time spent per traveller at the crossing station. It leverages software and hardware technologies ranging from portable readers/scanners, various emerging and novel subsystems for automatic controls, wireless networking for mobile controls, and secure backend storage and processing. The data collected are encrypted, securely transferred and analysed in real time, providing an automated decision support system for the border control officers.
Website	http://www.iborderctrl.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. European Dynamics Luxembroug Sa (LU) Consortium: 2. Biosec Group Korlatolt Felelossegu Tarsasag (HU) 3. Everis Aeroespacial y Defensa SL (ES) 4. Gottfried Wilhelm Leibniz Universitaet Hannover (DE) 5. Institute of Communication and Computer Systems (EL) 6. Itti Sp Zoo (PL) 7. Jas Technologie SP Zoo (PL) 8. Komenda Glowna Strazy Granicznej (PL) 9. Latvian State Border Guard (LV) 10. Orszagos Rendor – Fokapitanysag (HU) 11. Stremble Ventures Ltd (CY) 12. The Manchester Metropolitan University (UK) 13. Trainose Metafores-Metaforikes Ypiresies Epivaton kai Fortiou AE (EL)

7.4 Multi-modal security, risk management, including migration

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Multi-modal security, risk management, including migration	ABC4EU ACXIS CUSTOM DIRAC DOGGIES EFFISEC FASTPASS FIDELITY GLOBE INGRESS ORIGINS SNIFFER SNIFFLES SNOOPY TERASCREEN VIRTUOSO ZONESEC

These projects have been complemented by the following H2020 projects:

BODEGA	
Title	BOrdDErGuArd - Proactive Enhancement of Human Performance in Border Control (BODEGA)
Contract details	H2020 Secure Societies Call: H2020-BES-2014 Topic code: BES-14-2014 June 2015 / September 2018 - EUR 4,999,238 REA - 653676
Abstract	Investigation and modelling of Human Factors in border control to provide innovative socio-technical solutions for enhancing border guards' performance of critical tasks, support border management decision-making, and optimize travellers' border crossing experience. The project focuses on human and organizational factors of border control technologies and processes and examines the effects of introducing innovative technologies into key border guard tasks, traveller's performance and behaviour and to the total system at different levels and at different border control types: rail, sea and air borders. Outputs include a PROPER toolbox, which integrates ethical and societal dimensions aimed at enhancing the performance and professionalism of border guard stakeholders.
Website	http://bodega-project.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Teknologian Tutkimuskeskus VTT OY (FI) Consortium: 2. Agenzia delle Dogane (IT) 3. AIT Austrian Institute of Technology Gmbh (AT) 4. Atos Spain SA (ES) 5. Commissariat a l Energie Atomique et aux Energies Alternatives (FR) 6. Compagnie Europeenne d'intelligence Strategique (BE) 7. Happywise Oy (FI) 8. Kentro Meleton Asfaleias (EL) 9. Ministere de l'Interieur (FR) 10. Ministry of Citizens Protection (EL) 11. Rajavartiolaitos (FI) 12. Thales SAS (FR) 13. Ubium Oy (FI) 14. Union Internationale des Chemins de Fer (FR) 15. Universite de Namur ASBL (BE) 16. Zanasi Alessandro SRL (IT)

C-BORD	
Title	effective Container inspection at BORDer control points (C-BORD)
Contract details	H2020 Secure Societies Call: H2020-BES-2014 Topic code: BES-09-2014 June 2015 / November 2018 - EUR 11,826,452.50 HOME –653323
Abstract	The C-BORD Toolbox and Framework will enable customs to deploy comprehensive cost-effective container NII solutions to potentially protect all EU sea- and land-borders, satisfying a large range of container NII needs. The C-BORD Framework will help customs analyse their needs, design integrated solutions, and optimise the container inspection chain; it will address detection levels, false alarm levels, throughput, health and safety, logistics and cost and benefits. C-BORD will increase the probability of finding illicit or dangerous content with at least equal throughput of containers per time unit, reduce the need for costly, time-consuming and dangerous manual container inspections by customs officials, and in case a container is opened, increase the probability of finding illicit materials.
Website	http://www.cbord-h2020.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Commissariat a l Energie Atomique et aux Energies Alternatives (FR) Consortium: 2. Agenzia delle Dogane (IT) 3. ARTTIC (FR) 4. Chambre de Commerce et d'Industrie de Region Paris Ile-de-France (FR) 5. Costruzioni Apparecchiature Elettroniche Nucleari C.A.E.N. SPA (IT) 6. Ecole Normale Superieure (FR) 7. Fraunhofer Gesellschaft zur Foerderung der Angewandten Forschung E.V. (DE) 8. Hochschule Bonn-Rhein-Sieg (DE) 9. Izba Celna w Gdyni (PL) 10. JRC (BE) 11. Magyar Tudomanyos Akademia Energiatudomanyi Kutatokozpont (HU) 12. Ministerie van Financien Directoraat Generaal Belastingdienst (NL) 13. Narodowe Centrum Badan Jadrowych (PL) 14. Nemzeti ado-es Vamhivatal (HU) 15. Oslo Center for Science in Society (NO) 16. Smiths Heimann SAS (FR) 17. Symetrica Security Ltd (UK) 18. Univ. of Manchester (UK) 19. Univ. degli Studi di Padova (IT)

MESMERISE	
Title	Multi-Energy High Resolution Modular Scan System for Internal and External Concealed Commodities (MESMERISE)
Contract details	H2020 Secure Societies Call: H2020-BES-2015 Topic code: BES-08-2015 May 2016 / May 2019 - EUR: 4,999,792.50 HOME - 700399
Abstract	MESMERISE will develop and test a High-resolution non-intrusive scanner to automatically detect and identify both internal and external concealed. This resolution has the potential to enhance the detection of narcotics and explosives concealed in the body. A second subsystem for detecting externally concealed items is based on infrasound near-field acoustic holography. Acceptance by society will be promoted by communication activities highlighting its non-contact nature, non divest condition and the absence of the requirement for operators to view explicit images through automated detection making MESMERISE intrinsically respectful of dignity and privacy.
Website	http://sanjorgetecnologicas.com/mesmeriseh2020/index.html
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Universida de Alcala (ES) Consortium: 2. Bpe E.K. (DE) 3. Centro de Investigaciones Energeticas, Medioambientales y Tecnologicas-Ciemat (ES) 4. Comissariat a l'Engergie Atomique et aux Energies Alternatives (FR) 5. Home office (UK) 6. Linev Vladimir (BY) 7. Ministerio del Interior (ES) 8. Multix SA (FR) 9. Saint George Tech Lt (UK) 10. San Jorge Tecnológicas S.L. (ES 11. Tollregion Oslo og Akershus (NO) 12. Universitatea Dunarea de jos din Galati (RO)

PROTECT	
Title	Pervasive and UseR Focused BiomeTrics BordEr ProjeCT (PROTECT)
Contract details	H2020 Secure Societies Call: H2020-BES-2015 Topic code: BES-06-2015 September 2016 / September 2019 - EUR: 4,981,752.50 REA - 700259
Abstract	The goal of the PROTECT project is an enhanced biometric-based person identification system that works across a range of border crossing types and that has strong user-centric features. The system will be deployed in Automated Border Control (ABC) areas supporting border guards to facilitate smooth and non-intrusive rapid crossing by travellers based on deployment of the next generation of biometric identification detection methods. To achieve these goals, a multi-biometric enrollment and verification system is envisaged, taking into account current and next-generation e-Passport chips, mobile equipment and person identification 'on the move'. An integral part of the project is collection and dissemination of new border-realistic biometric datasets, and systematic evaluation of the developed biometric methods including vulnerability and privacy assessment.
Website	http://projectprotect.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Univ. Of Reading (UK) Consortium: 2. Eurecom (FR) 3. Giesecke & Devrient Gesellschaft mit Beschrankter Haftung (DE) 4. Home Office (UK) 5. Intrepid Minds Ltd (UK) 6. Itti Sp Zoo (PL) 7. Komenda Glowna Strazy Granicznej (PL) 8. Paris-Lodron-Universitat Salzurg (AT) 9. Univ. De Namur Asbl (BE) 10. Verdios Gmbh (DE) 11. Wosjkowa Akademia Techniczna im Jaroslawa Dabrowskiego (PL)

ISF projects

The above projects are complemented by capacity-building projects funded by the Internal Security Fund Programme. Please note that ISF projects classification might differ from the taxonomy presented in this document. Visit ec.europa.eu/home-affairs/financing/fundings/security-and-safeguarding-liberties/internal-security-fund-police_en for more information on ISF projects.

Cooperation on Border Management among Turkey, Bulgaria and Greece	
Title	Cooperation on Border Management among Turkey, Bulgaria and Greece
Project number	0002
Contract details	€ 57,000.00
Consortium (prone to modification in case of GA amendment)	Coordinator: Hellenic Police Heaquarters

Development of the next generation uniform format EU visa sticker	
Title	Development of the next generation uniform format EU visa sticker
Project number	HOME/2015/ISFB/AG/VISA/0001
Contract details	€ 1,000,000.00
Consortium (prone to modification in case of GA amendment)	Coordinator: Federal Criminal Police Office Germany (BKA)

Emergency assistance in support of the organisation, provision of legal information and interpretation for the effective management of immigration flows in the Eastern External Borders	
Title	Emergency assistance in support of the organisation, provision of legal information and interpretation for the effective management of immigration flows in the Eastern External Borders
Project number	HOME/2014/ISFB/AG/EMAS/0007
Contract details	€ 693,997.00
Consortium (prone to modification in case of GA amendment)	Coordinator: First Reception Service Consortium: IOM

Humane and EU conform handling of extreme migratory pressure on Hungary	
Title	Humane and EU conform handling of extreme migratory pressure on Hungary
Project number	HOME/2014/ISFB/AG/EMAS/0006
Contract details	€ 1,489,098.60
Consortium (prone to modification in case of GA amendment)	Coordinator: Hungarian National Police

Linguistic and Intercultural Mediation for Emergency action	
Title	Linguistic and Intercultural Mediation for Emergency action
Project number	HOME/2015/ISFB/AG/EMAS/0001
Contract details	€ 4,413,237.46
Consortium (prone to modification in case of GA amendment)	Coordinator: Ministry Of Interior Consortium: CIES Onlus

Strengthening external border protection in relation to the irregular mass arrival of third country nationals	
Title	Strengthening external border protection in relation to the irregular mass arrival of third country nationals
Project number	HOME/2015/ISFB/AG/EMAS/0012
Contract details	€ 3,995,001.67
Consortium (prone to modification in case of GA amendment)	Coordinator: Ministry of Interior

Strengthening of the first reception response to new arrivals in mixed migratory movements on the Aegean islands	
Title	Strengthening of the first reception response to new arrivals in mixed migratory movements on the Aegean islands
Project number	HOME/2015/ISFB/AG/EMAS/0003
Contract details	€ 2,700,000.01
Consortium (prone to modification in case of GA amendment)	Coordinator: UNHCR Consortium: METaction (EL) and PRAKSIS (EL)

8. Societal resilience and civil protection

8.1 Socio-economic and ethical implications

8.1.1 Ethics, Societal implications

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Ethics, Societal implications	ADDPRIV ALTERNATIVE EVIDENCE INEX PACT PARIS PRISMS PS RESPECT SAPIENT SECONOMICS SECILE SLANDAIL SOURCE SURPRISE SURVEILLE VIDEOSENSE

These projects have been complemented by the following H2020 projects:

COMRADES	
Title	Collective Platform for Community Resilience and Social Innovation during Crises (COMRADES)
Contract details	Leadership in enabling and industrial technologies Call: H2020-ICT-2015 Topic code: ICT-10-2015 January 2016 / January 2018 - EUR: 1.999.021,25 CNECT - 687847
Abstract	This project will build an intelligent collective resilience platform to help communities to reconnect, respond, and recover from crisis situations. COMRADES will achieve this through an interdisciplinary, socio-technical approach, which will draw on the latest advances in computational social science, social computing, real-time analytics, text and social media analysis, and Linked Open Data. The platform specifications and design requirements will be derived through participatory design workshops with existing activist, responder, and reporter communities. The open source COMRADES platform will include new intelligent algorithms aimed at helping communities, citizens, and humanitarian services with analysing, verifying, monitoring, and responding to emergency events.
Website	https://www.comrades-project.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. The Open University (UK) Consortium: 2. Government To You (BE) 3. I-Hub Limited (KE) 4. The University Of Sheffield (UK) 5. Universitetet I Agder (NO)

CUIDAR	
Title	Cultures of Disaster Resilience among children and young people (CUIDAR)
Contract details	H2020 Secure Societies Call: H2020-DRS-2014 Topic code: DRS-21-2014 July 2015 / July 2018 - EUR: 2,009,653.50 REA - 653753
Abstract	CUiDAR will address the exclusion of children and young people from the disaster planning and management process; it will provide innovative and creative communication channels for children's voices to be heard and it will develop a child centred disasters management framework for use by policy/decision makers in participating countries, the EU and beyond.. Each workpackage is designed to create stronger awareness of needs and capacities of children and will enable enhanced local, national and EU institutional and policy response for what is a growing and urgent societal problem: how to develop meaningful and effective disaster management.
Website	http://www.lancaster.ac.uk/cuidar/en/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Lancaster University (UK) Consortium: 2. Fundacio per a la Universitat Oberta de Catalunya (ES) 3. Instituto de Ciencias Sociais da Universidade de Lisboa (PT) 4. Panepistimio Thessalias (EL) 5. Save the children Italia Onlus Associazione (IT) 6. The Save the Children Fund (UK)

EDUCEN	
Title	European Disasters in Urban centres: a Culture Expert Network (3C – Cities, Cultures, Catastrophes) (EDUCEN)
Contract details	H2020 Secure Societies Call: H2020-DRS-2014 Topic code: DRS-21-2014 May 2015 / May 2017 - EUR: 1,644,671.25 REA - 653874
Abstract	EDUCEN is a coordination and support action that will work on the complex interplay between culture(s) and disaster risk reduction. It allows formal and informal emergency responders, risk managers, the military, urban planners and planners at regional and national level to be better equipped to deal with elements of culture. EDUCEN encourages and enables multi-stakeholder dialogue through which academics, practitioners and communities can actively engage and share knowledge, expertise and experiences. The final product will be a multi-level, multi-media handbook, including visuals, maps, written narratives, and videos to support disaster risk reduction professionals to better appraise relevant cultural aspects in their own 'community of practice' as well as in the environment where they intervene.
Website	http://www.educenproject.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Wageningen University (NL) Consortium: 2. Anaptyksiakh Boloy Anaptyksiakh Anonymh Etairia (AE) (EL) 3. Arama Kurtarma Dernegi (Akut) (TR) 4. Confederacion Hidrografica Del Segura (ES) 5. Consiglio Nazionale Delle Richerche (IT) 6. I-Catalist SL (ES) 7. Ministry of Defense (NL) 8. Politecnico di Milano (IT) 9. Stifltelsen the Stockholm Environment Institute (SE) 10. Stowarzyszenie Centrum Rozwiazan Systemowych (PL)

ICT4COP	
Title	Community-Based Policing and Post-Conflict Police Reform (ICT4COP)
Contract details	H2020 Secure Societies Call: H2020-FCT-2014 Topic code: FCT-14-2014 June 2015 / June 2020 - EUR: 4,999,998.00 REA - 653909
Abstract	This project will conduct integrated social and technical research on COP in post-conflict countries in S.E. Europe, Asia, Africa and Central America. The project will lead to a better understanding of police-community relations, and innovation in information and communication technology (ICT) for enhancing these relations in post-conflict countries undergoing serious security reform. Linking social and technological research, the project will study social, cultural, human security, legal and ethical dimensions of COP to understand how citizens and police can develop sustainable relations with the use of ICTs. The project will explore ICT solutions to facilitate, strengthen and accelerate positive COP efforts and police-citizen interactions where trust levels are weak. The project includes a Policing Experts Network whose role is to support research planning, and dissemination and exploitation of findings, grounding the research in police practice.
Website	https://communitypolicing.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Norges Miljo-og Biovitenskaplige Universitet (NO) Consortium: 2. Applied Intelligence Analytics Limited (IE) 3. Hogskolen I Oslo og Akershus (NO) 4. Norsk Institutt for By- og Regionforskning (NO) 5. Norsk Utenrikspolitisk Institutt (NO) 6. Norwegian Ministry of Justice and Public Safety (NO) 7. Overseas Development Institute (UK) 8. Ruhr-Universitaet Bochum (DE) 9. Social Impact Lab CIC (UK) 10. Univ. Bremen (DE) 11. Univ. Durham (UK) 12. Univ. Jagiellonski (PL)

IMPACT	
Title	Impact of Cultural aspects in the management of emergencies in public Transport (IMPACT)
Contract details	H2020 Secure Societies Call: H2020-DRS-2014 Topic code: DRS-21-2014 May 2015 / November 2017 - EUR: 1,398,912.50 REA - 653383
Abstract	The IMPACT Coordination and Supporting Action is aimed at analysing the different cultural behaviours for the prevention of emergencies with particular emphasis on risk and situational awareness perception of the different cultural groups; information to passengers with different socio-cultural backgrounds; cooperation towards prevention of security threats; security checks. IMPACT will produce a cultural risk assessment methodology and the associated mitigation actions for the public transport sector also developing simulators and models (i.e. identify innovative solutions that can support public transport operators in improving the communication with passengers through messages to the different cultural communities, develop best practices, dedicated training material and procedures for both public transport operators and first responders).
Website	http://www.impact-csa.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Deep Blue SRL (IT) Consortium: 2. Anadolu University (TR) 3. Nuovo Trasporto Viaggiatori Spa (IT) 4. Proprs Ltd (UK) 5. Stichting VU (NL) 6. Univ. of Leeds (UK) 7. Urzad Morski w Gdyni (PL) 8. Vissche Uchilishte po Menidzhmant (BG)

MARGIN	
Title	Tackle Insecurity in Marginalized Areas (MARGIN)
Contract details	H2020 Secure Societies Call: H2020-FCT-2014 Topic code: FCT-13-2014 May 2015 – May 2017 - EUR: 1,881,399.50 REA - 653004
Abstract	The MARGIN project coordination activities are intended to contribute to the creation of sustainable modes of cooperation between stakeholders dealing with security issues. The project's aims are: (1) to create a framework enabling end-users to contrast objective and subjective measures of insecurity (2) to develop and validate a thematic survey that allows for the assessment of the impact of demographic, socio-economic and socio-geographic variables on the perception of insecurity (3) to investigate the socio-cultural determinants of insecurity perception through the implementation of anthropological fieldwork in five EU countries (4) to share best practices and outcomes in a final event. By deepening the understanding of the root causes of insecurity, MARGIN is expected to foster the creation of community resilience practices empowering citizens to better face risks and increase the public and personal perception of security.
Website	http://marginproject.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Universistat de Barcelona (ES) Consortium: 2. Departament d'Interior - Generalitat de Catalunya (ES) 3. Eurocrime – research, training and consulting SRL (IT) 4. Institut National des Hautes Etudes de la Securite et de la Justice (FR) 5. Orszagos Kriminologiaj Intezet (HU) 6. Universita Degli Studi di Milano-Bicocca (IT) 7. University College London (UK)

EUNPACK	
Title	Good intentions, mixed results – A conflict sensitive unpacking of the EU comprehensive approach to conflict and crisis mechanisms (EUNPACK)
Contract details	Europe in a changing world - Inclusive, innovative and reflective societies Call: H2020-INT-SOCIETY-2015 Topic code: INT-05-2015 April 2016 / April 2019 - EUR: 2.495.674,00 REA - 693337
Abstract	The EUNPACK project unpacks EU crisis response mechanisms, with the aim to increase their conflict sensitivity and efficiency. By combining bottom–up perspectives with an institutional approach, EUNPACK will increase our understanding of how EU crisis responses function and are received on the ground in crisis areas. EUNPACK analyses two gaps in EU crisis response. First, the intentions–implementation gap, which relates to 1) the capacity to make decisions and respond with one voice and to deploy the necessary resources, 2) how these responses are implemented on the ground by various EU institutions and member states, and 3) how other actors – local and international – enhance or undermine the EU's activities. Second, the project addresses the gap between the implementation of EU policies and approaches, and how these policies and approaches are received and perceived in target countries, what we refer to as the implementation¬–local reception/perceptions gap.
Website	http://www.eunpack.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Norsk Utenrikspolitisk Institutt (NO) Consortium: 2. Alliance Pour Refonder La Gouvernance En Afrique Arga (SN) 3. Beogradski Centar Za Bezbednosnu Politiku Udruzenje (RS) 4. Centre For European Policy Studies (BE) 5. Centre National De La Recherche Scientifique Cnrs (FR) 6. Freie Universitaet Berlin (BE) 7. Kosovar Centre For Security Studies (XK) 8. Middle East Research Institute (IQ) 9. National University Of Kyiv-Mohyla Academy (UA) 10. Scuola Superiore Di Studi Universitari E Di Perfezionamento Sant'anna (IT) 11. The University Of Manchester (UK) 12. Univerzita Komenskeho V Bratislave (SK)

TransSOL	
Title	European paths to transnational solidarity at times of crisis: Conditions, forms, role-models and policy responses (TransSOL)
Contract details	Europe in a changing world - Inclusive, innovative and reflective societies Call: H2020-EURO-SOCIETY-2014 Topic code: EURO-3-2014 June 2015 / June 2018 - EUR: 2.483.805,00 REA - 649435
Abstract	TransSOL is committed to the systematic, interdisciplinary and praxis-oriented analysis of European solidarity in times of crisis. It has three overarching objectives: (1) it will map and analyse solidarity in Europe by means of a cross-national database and (2) it will gather systematic data on the contextual factors and engage into political and legal analyses to ascertain the influence of the socio-economic, political, and legal context on solidarity, in particular the impact of the crisis, the EU's political responses and target-groups specific public policies; and (3) it will identify and develop best practices of transnational solidarity, draft evidence-based policy recommendations, and engage proactive dissemination.
Website	http://transsol.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Universitaet Siegen (DE) Consortium: 2. European Alternatives Berlin E V (DE) 3. European Alternatives Limited Lbg (UK) 4. Fondation Nationale Des Sciences Politiques (FR) 5. Kobenhavns Universitet (DK) 6. Panepistimio Kritis (EL) 7. The Glasgow Caledonian University (UK) 8. The University Of Sheffield (UK) 9. Universita Degli Studi Di Firenze (IT) 10. Universite De Geneve (CH) 11. Uniwersytet Warszawski (PL)

8.1.2 Post-crisis societal and psychological support

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Post-crisis societal and psychological support	BESECU NDTERROR OPSIC PSYCRIS SUPER

In Horizon2020, no dedicated research projects or studies have been carried out in relation to post-crisis societal and psychological support.

8.1.3 Societal resilience to disasters

SMR	
Title	Smart Mature Resilience (SMR) ***This project also corresponds to the category 'Multi-climate hazard risk prevention, awareness, preparedness, resilience'.***
Contract details	H2020 Secure Societies Call: H2020-DRS-2014 Topic code: DRS-07-2014 June 2016 / June 2018 - EUR: 4,641,233.25 REA - 653569
Abstract	Smart Mature Resilience (SMR) will develop and validate Resilience Management Guidelines that will provide a robust shield against man-made and natural hazards, enabling society to resist, absorb, accommodate and to restore. The Resilience Management Guidelines comprise of the following tools: (1) a Resilience Maturity Model defining the trajectory of an entity through measurable resilience levels; (2) a Systemic Risk Assessment Questionnaire that, beyond assessing the entity's risk, determines its resilience maturity level; (3) a portfolio of Resilience Building Policies that enable the entity's progression towards higher maturity levels; (4) a System Dynamics Model allowing to diagnose, monitor and explore the entity's resilience trajectory as determined by resilience building policies, and, (5) a Resilience Engagement and Communication Tool to integrate the wider public in community resilience, including public-private cooperation.
Website	http://smr-project.eu/home/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Universidad De Navarra (ES) Consortium: 2. Ayuntamiento De Donostia San Sebastian (ES) 3. Bristol City Council (UK) 4. Din Deutsches Institut Fuer Normung E.V. (DE) 5. Fomento De San Sebastian Sa (ES) 6. Glasgow City Council (UK) 7. Iclei European Secretariat Gmbh (Iclei Europasekretariat Gmbh)* (DE) 8. Kristiansand Kommune (NO) 9. Linkopings Universitet (ES) 10. Rigas Dome (LV) 11. Risorse Per Roma S.P.A. (IT) 12. Roma Capitale (IT) 13. Universitetet I Agder (NO) 14. University Of Strathclyde (UK) 15. Vejle Kommune (DE)

8.2 Public involvement / engagement in research and use of social media

8.2.1 Enhanced communication in crisis management

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Enhanced communication in crisis management	COSMIC EMERGENT HELP ISAR+ PEP SOTERIA

These projects have been complemented by the following H2020 projects:

MEDIA4SEC	
Title	The emerging role of new social media in enhancing public security (MEDIA4SEC)
Contract details	H2020 Secure Societies Call: H2020-FCT-2015 - Topic code: FCT-15-2015 July 2016 / January 2019 - EUR: 1,902,006.25 REA - 700281
Abstract	MEDIA4SEC focuses upon enhancing understanding of the opportunities, challenges and ethical consideration of social media use for public security. MEDI@4SEC will seek a better understanding of how social media can, and how social media cannot be used for public security purposes and highlight ethical, legal and data-protection-related issues and implications. Activities centre around six relevant themes: DIY Policing; Everyday security; Riots and mass gatherings: The dark web; Trolling; and Innovative market solutions. MEDI@4SEC will provide an evidence-base and roadmap for better policymaking including: best practice reports; a catalogue of social media technologies; recommendations for EU standards; future training options; and, ethical awareness raising.
Website	http://media4sec.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Univ. of Warwick (UK) Consortium: 2. Ayuntamiento de Valencia (ES) 3. European Organisation for Security SCRL (BE) 4. Forum Europeen pour la Securite Urbaine (FR) 5. Fraunhofer Gesellschaft zur Foerderung der Angewandten Forschung EV (DE) 6. Kentro Meleton Asfaleias (EL) 7. Nederlandse Organisatie voor Toegepast Natuurwetenschapelijk Onderzoek TNO (NL) 8. Police Service of Northern Ireland (UK) 9. Univ. Utrecht (NL) 10. Xlab Razvoj Programske Opreme in Svetovanje Doo (SI)

TRILLION	
Title	TRusted, CItizen - LEA coILaboratIon over sOcial Networks (TRILLION)
Contract details	H2020 Secure Societies Call: H2020-FCT-2014 Topic code: FCT-14-2014 September 2015 / September 2018 - EUR: 4,263,407.50 REA - 653256
Abstract	TRILLION delivers a platform to support the extensive collaboration between citizens and LEAs. The operational environment of the platform is not limited to an on-going crisis, but also extends to the period before it through early identification and prevention of emerging risks.
Website	https://trillion-project.eng.it/home
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Engineering - Ingegneria Informatica Spa (IT) Consortium: 2. Atos Spain Sa (ES) 3. Brainport Development Nv (NL) 4. Citta di Lecce*Comune di Lecce (IT) 5. Comune di Ancona (IT) 6. Dit Is Beveiligen Bv (NL) 7. Ethniko Kentro Erevnas Kai Technologikis Anaptyxis (EL) 8. Gemeente Eindhoven (NL) 9. Inov Inesc Inovacao - Instituto de Novas Tecnologias (PT) 10. Ministério Da Justiça (PT) 11. Mittuniversitetet (SE) 12. Polyground Bv (NL) 13. Royal United Services Institute for Defence And Security Studies (UK) 14. Sorama Bv (NL) 15. Stichting Dutch Institute for Technology, Safety & Security (NL) 16. Stichting Regionale Toezicht Ruimte Gelderland-Zuid (NL) 17. Technological Educational Institute of Piraeus (EL) 18. University of Greenwich (UK) 19. Vinotion Bv (NL) 20. Xlab Razvoj Programske Opreme In Svetovanje Doo (SI)

8.2.2 Civil society engagement

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Civil society engagement	ARCHIMEDES ASSERT ATHENA NITIMSER PANDORA SECUREPART

These projects have been complemented by the following H2020 projects:

City.Risks	
Title	Avoiding and mitigating safety risks in urban environments (City.Risks)
Contract details	H2020 Secure Societies Call: H2020-FCT-2014 Topic code: FCT-14-2014 May 2015 / April 2018 - EUR 3,934,811.00 REA – 653747
Abstract	The main objective of the City.Risks project is to increase the perception of security of citizens in cities by activating in a more transparent and sustainable way their participation in communities, through which information and interventions can be provided. City.Risks project will leverage a set of innovative technologies, city infrastructures, and available data sources, but more importantly will aim at making the citizens' smart phones the modern tool for increasing their personal and collective sense of security. The project will design and develop an innovative ecosystem of mobile services that will transform the smart phone or the tablet of the citizen into a tool that will collect, visualise and share safety-critical information with the appropriate authorities and communities.
Website	http://project.cityrisks.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Space Hellas Anonymi Etaireia Systimata Kai Ypiresies Tilepikoinonionpliroforik-is Asfaleias - Idiotiki Epicheirisi Parochis Yperision ASFA (EL) Consortium: 2. Athena Research and Innovation Center in Information Communication & Knowledge Technologies (EL) 3. Birkbeck College – Univ. of London (UK) 4. Comune di Prato (IT) 5. Fraunhofer Gesellschaft zur Foerderung der Angewandten Forschung E.V. (DE) 6. Freie Univ. Berlin (DE) 7. G4s Security Solutions Eood (BG) 8. Infili Technologies Private Company (EL) 9. Infili Uk Ltd (UK) 10. Institute of Communication and Computer Systems (EL) 11. London Borough of Waltham Forest (UK) 12. Malmoe Hoegskola (Malmoe University) (SE) 13. Roma Capitale (IT) 14. Synyo Gmbh (AT)

CITYCoP	
Title	Citizen Interaction Technologies Yield Community Policing (CITYCoP)
Contract details	H2020 Secure Societies Call: H2020-FCT-2014 Topic code: FCT-14-2014 June 2015 / May 2018 - EUR 5,576,716.00 REA - 653811
Abstract	CITYCoP sets out to find out why the EU appears to be lagging behind although Community Policing is nominally a policy which has been put into action in a number of EU countries. It then goes on to develop a solution including a new smartphone app and on-line portal which are capable of being deployed in any European city while still retaining "local flavour" and diversity. A training scheme, including use of serious games, will be developed to assist training of officers and citizens in use of the app and portal.
Website	https://www.citycop.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Rijksuniversiteit Groningen (NL) Consortium: 2. Academia Nationala de Informatii Mihai Viteazul (RO) 3. Comune di Firenze (IT) 4. Consiglio Nazionale delle Ricerche (IT) 5. Federation Autonome de la Fonction Publique Territoriale et des Etablissements Publics (FR) 6. Fraunhofer Gesellschaft zur Foerderung der Angewandten Forschung E.V. (DE) 7. Gottfried Wilhelm Leibniz Universitaet Hannover (DE) 8. Hogskolen i Gjovik (NO) 9. Hoplite Software SL (ES) 10. Innenministerium Niedersachsen (DE) 11. Inspectoratul General al Politiei Romane (RO) 12. Institutul Pentru Tehnologii Avansate (RO) 13. Laboratorio di Scienze della Cittadinanza (IT) 14. Law and Internet Foundation (BG) 15. Ludwig Boltzmann Gesellschaft Osterreichische Vereinigung zur Forderung der Wissenschaftlichen Forschung (AT) 16. Ministerio da Administracao Interna (PT) 17. Norges Teknisk-Naturvitenskapelige Universitet NTNU (NO) 18. Nutcracker Research Limited (UK) 19. Serviciul de Telecomunicatii Speciale (RO) 20. Police and Crime Commissioner for South Yorkshire (UK) 21. Universita ta Malta (MT) 22. Univerzitet u Novom SADU (RS) 23. Youris.Com (BE)

INSPEC2T	
Title	Inspiring CitizeNS Participation for Enhanced Community PoliCing AcTions (INSPEC2T)
Contract details	H2020 Secure Societies Call: H2020-FCT-2014 Topic code: FCT-14-2014 May 2015 / May 2018 - EUR: 4,941,003.75 REA - 653749
Abstract	INSPEC2T projects' scope is to develop a sustainable framework for Community Policing that effectively addresses and promotes seamless collaboration between the police and the community. INSPEC2T is focusing on a user-centric design and development approach, and has already mobilized and engaged a critical user group mass, in EU and abroad. With special emphasis on social media, it consolidates and modernizes bidirectional communication of stakeholders, using multi-level anonymity flags and having a clear understanding of acceptability issues. It adheres to an approach where social, cultural, legal and ethical dimensions are embedded into core user centric design specifications and implementation procedures. Special focus will be given to Community Policing awareness raising activities for both police and citizens.
Website	http://inspec2t-project.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Kentro Meleton Asfaleias (EL) Consortium: 2. Aditess Advanced Integrated Technology Solutions & Services Ltd. (CY) 3. Ayuntamiento de Valencia (ES) 4. CGI Nederland BV (NL) 5. Deutsche Hochschulde der Polizei (DE) 6. Eticas Research and Consulting SL (ES) 7. Exus Software Ltd (UK) 8. Fundacion Centro de Tecnologias de Interacion Visual y Comunicaciones Vicomtech (ES) 9. IMC Diachirisi Pliroforion Kai Epikinonion Anonymos Etairia (EL) 10. Intrasoft International SA (LU) 11. Ministerio Del Interior (ES) 12. Nederlandse Organisatie voor Toegepast Natuurwetenschappelijk Onderzoek TNO (NL) 13. PlayGen Ltd (UK) 14. Satways – Proionta Kai Ypiresies Tilematikis Diktyakon Kai Tilepikinoniakon Efarmogon Etairia Periorismenis Efthinis Epe (EL) 15. The Chief Constable of Lancashire Constabulary (UK) 16. Trilateral Research & Consulting LLP (UK) 17. Trilateral Research LTD (UK) 18. University of Ulster (UK) 19. Vienna Centre for Societal Security – Vicesse, Wiender Zentrum fur Sozialwissenschaftliche Sicherheitsforschung (AT)

Unity	
Title	Unity (Unity)
Contract details	H2020 Secure Societies Call: H2020-FCT-2014 - Topic code: FCT-14-2014 May 2015 / May 2018 - EUR: 4,330,900.00 REA - 653729
Abstract	The Unity aims to strengthen the connection between the police and the diverse communities they serve to maximise the safety and security of all citizens. Unity shall identify best practices in Community Policing (CP) through primary and secondary research to enhance cooperation between LEAs and citizens through the development and live pilot demonstrations of technological tools in six EU member states that facilitate, strengthen and accelerate community and LEAs communications. Unity will provide LEAs with a new CP model and shared framework of governance and enabling tools and technology to support closer cooperation for greater, more effective and efficient and more inclusive CP. Unity seeks new ways of working in which the police will serve as a catalyst for change within communities, helping the latter to become an integral part of the solution, and thereby sharing the ownership and delivery of a sustainable CP model which simultaneously embraces the benefits of technology while meeting diverse community needs.
Website	https://www.unity-project.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Police And Crime Commissioner For West Yorkshire (UK) Consortium: 2. Edinburgh Napier University (UK) 3. Erasmus Universiteit Rotterdam (NL) 4. European Institute Foundation (BG) 5. Fachhochschule fur Offentliche Verwaltung Und Rechtspflege In Bayern (DE) 6. Policijska Akademija (HR) 7. Poliisiammattikorkeakoulu (FI) 8. Politsei- Ja Piirivalveamet (EE) 9. Rinicom Limited (UK) 10. Serco Belgium Sa (BE) 11. Service Public Federal Interieur (BE) 12. Sheffield Hallam University (UK) 13. Treelogic Telematica y Logica Racional para la Empresa Europea Sl (ES) 14. University of Dundee (UK) 15. University St Kliment Ohridski Bitola (MK)

8.3 Population alert, civil protection (in case of emergencies) and practitioners' involvement

8.3.1 Civil Protection Operations

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 project is described.

Research sub-category	FP7 projects
Civil Protection Operations	HELI4RESCUE

These projects have been complemented by the following H2020 projects:

LYNCEUS2MARKET	
Title	An innovative people localisation system for safe evacuation of large passenger ships (LYNCEUS2MARKET)
Contract details	Smart, Green and Integrated Transport Call: H2020-MG-2014_TwoStages Topic code: MG-4.2-2014 June 2015 / June 2018 - EUR: 7.260.975,00 INEA - 636286
Abstract	Addresses challenges related to evacutation of large passenger ships during emergency situations through delivering an operational system for safe evacuation based on innovative people localisation technologies.The system consists of: 1) Localisable life jackets for real-time localisation 2) Smart smoke detectors that also act as base stations of an on-board localisation system 3) Localisable bracelets able to send activity data to the emergency management team 4) Low cost fire and flooding escalation monitoring sensor notes 5) novel mustering handheld devices for automatic identification and counting of passengers 6) Smart localisable cabin key cards 7) Intelligent decision support software that provides integrated real-time visualisation, passenger counting and evacuation decision support 8) Innovative shore or ship-launched UAVs for localising people in the sea and assisting SAR operations when accident occurs in extreme weather, during the night or in a remote location 9) Low-cost rescue-boat mounted radars locating individuals in the vicinity of the boat.
Website	http://lynceus-project.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Rtd Talos Limited (CY) Consortium: 2. Asociacion De Empresarios Textiles De La Region Valenciana (ES) 3. Autronica Fire And Security As (NO) 4. Canepa & Campi Srl (IT) 5. Celestyal Ship Management Limited (CY) 6. Csem Centre Suisse D'electronique Et De Microtechnique Sa - Recherche Et Developpement (CH) 7. Foro Maritimo Vasco (ES) 8. G.G. Dedalos Technology Services Ltd (CY) 9. I. Panaretou - Char. Kostopoulos Oe (EL) 10. Lloyd's Register Emea Ips (UK) 11. Maritime Institute Of Eastern Mediterranean - Mar.In.E.M. (CY) 12. Ministry Of Transport, Communications And Works (CY) 13. Rcl Cruises Ltd (UK) 14. Safe Marine Srl (IT) 15. Signalgenerix Ltd (CY) 16. Technische Universitaet Dresden (DE)

MOBNET	
Title	MOBile NETwork for people's location in natural and man-made disasters (MOBNET)
Contract details	Leadership in enabling and industrial technologies Call: H2020-Galileo-2015-1 Topic code: GALILEO-2-2015 January 2016 / March 2018 - EUR: 986.272,25 GSA - 687338
Abstract	Design of a Search and Rescue (SAR) system for the location of isolated victims in the case of natural or man-made disasters such as earthquakes, hurricanes or large snow storms. The system will also help first responder services to find fugitives or smugglers hidden within buildings. Novel EGNSS and DCT methods will be applied and a reliable communication link between UAVs and the ground station will be designed to ensure uninterrupted command and control communication among devices and the integrity of communication signals.
Website	http://mobnet-h2020.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Orbital Sistemas Aeroespaciales Sl (ES) Consortium: 2. Asociacion Centro Tecnologico Ceit-Ik4 (ES) 3. Delft Dynamics B.V. (NL) 4. Navpos Systems Gmbh (DE) 5. The Main School Of Fire Service (PL)

8.3.2 Population alerting

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 project is described.

Research sub-category	FP7 projects
Population alerting	POP-ALERT

Note: in the working paper (FP7 mapping) of DG Home this policy area is referred as Population alert and civil protection in case of emergencies.

8.3.3 Public Protection

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Public Protection	PPDR-TC SAFECITI

8.3.4 International cooperation / Humanitarian aid

EU-CIVCAP	
Title	Preventing and responding to conflict: developing EU CIVilian CAPabilities for a sustainable peace (EU-CIVCAP)
Contract details	H2020 Secure Societies Call: H2020-BES-2014 Topic code: BES-12-2014 December 2015 / November 2018 - EUR 1.714.975 REA/B/04 - 653227
Abstract	EU-CIVCAP will provide a comprehensive, comparative and multidisciplinary analysis of EU civilian capabilities for external conflict prevention and peacebuilding in order to identify 'the best civilian means to enhance these capabilities' and address existing shortfalls. There are three inter-related objectives: (1) To assess EU civilian capabilities for external conflict prevention and peace building; (2) To identify and document lessons learned and best practices; (3) To enhance future policy practice and research in this domain. The project will gather, synthesise, further develop and disseminate knowledge and learning on civilian conflict prevention and peacebuilding through the development of a catalogue of lessons learned and best practices reports, the creation of an expert network, engagement through social media, and the organisation of dissemination events in different formats in this area.
Website	https://eu-civcap.net/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. University of Bristol (UK) Consortium 2. Beogradski Centar za Bezbednosnu Politiku Udruzenje (RS) 3. Centre for European Policy Studies (BE) 4. Conciliation Resources LBG (UK) 5. European Peacebuilding Liaison Office (BE) 6. European Union Satellite Centre (ES) 7. Forsvaret og Forsvarsministeriets Styrelser (DK) 8. Istituto Affari Internazionali (IT) 9. Roskilde Universitet (DK) 10. The University Court of the University of Aberdeen (UK) 11. Transparency Solutions Limited (UK) 12. Universiteit Maastricht (NL)

GAP	
Title	Gaming for Peace (GAP) ***This project also corresponds to the category 'Training and networking'.***
Contract details	H2020 Secure Societies Call: H2020-BES-2015 Topic code: BES-13-2015 September 2016 / February 2019 - EUR 2.035.437,50 REA/B/04 - 700670
Abstract	GAP provides an efficient and effective means of developing and delivering a training curriculum on critical soft skills (understanding of diverse personnel – including diversity in organisations, gender and culture – effective communication and cooperation in context of diversity) for EU Personnel in Conflict Prevention and Peace Building (CPPB) missions. GAP designs a multiple player online role playing game which simulates scenarios from CPPB missions using an iterative process of curriculum development and refinement through end users' (military, police and civilian personnel) evaluation of the base curriculum by playing the game. The game can be accessed anywhere via the internet, customizable at low cost.
Website	https://gap-project.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. The College of the Holy & Undivided Trinity of Queen Elizabeth near Dublin (IE) Consortium: 2. Akademia Sztuki Wojennej (PL) 3. Enquirya BV (NL) 4. Future Analytics Consulting Limited (IE) 5. Haunted Planet Studios Ltd (IE) 6. Institut po Otbrana (BG) 7. Laurea-Ammattikorkeakoulu OY (FI) 8. Ministerio da Administracao Interna (PT) 9. National Defence University (FI) 10. National University of Ireland Maynooth (IE) 11. Police Service of Northern Ireland (IE) 12. University of Ulster (UK) 13. Upskill Enterprise Ltd (UK) 14. Wyzsza Szkola Policji w Szczytnie (PL)

IECEU	
Title	Improving the Effectiveness of the Capabilities (IEC) in EU conflict prevention (IECEU)
Contract details	H2020 Secure Societies Call: H2020-BES-2014 Topic code: BES-12-2014 May 2015 / January 2018 - EUR 2.081.110 REA/B/04 - 653371
Abstract	The IECEU project analyses and assesses best practices and lessons learned related to civil-military synergies in EU conflict response capabilities, with a view to enhance the civilian CPPB capabilities of EU with a catalogue of practices, new solutions and approaches. It will seek to find out how to increase the interoperability of resources in the crisis management and peace building and what the potential for pooling and sharing of EU capabilities and technologies is. The main goals of the IECEU -project are:1) Analysing and assessing the current situation of on-going and past missions and operations, 2) Learning from lessons provided by these missions and assessing the different options, 3) Providing new solutions, approaches and recommendations for EU to guarantee long-term stability.
Website	http://www.ieceu-project.com/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Laurea-Ammattikorkeakoulu OY (FI) Consortium 2. Austria Institut Fur Europa- Und Sicherheitspolitik (AIES) (AT) 3. Forsvaret og Forsvarsministeriets Styrelser (DK) 4. National Defence University (FI) 5. National University of Ireland Maynooth (IE) 6. Pelastusopisto (FI) 7. Roskilde Universitet (DK) 8. Saferglobe Finland RY (FI) 9. Toussaint Mascia Diana (NL) 10. Univerza v Ljubljani (SI) 11. Ustanova-Center za Evropsko Prihodnost (SI)

iTRACK	
Title	Integrated system for real-time TRACKing and collective intelligence in civilian humanitarian missions (iTRACK)
Contract details	H2020 Secure Societies Call: H2020-BES-2015 Topic code: BES-10-2015 May 2016 / May 2019 - EUR: 3,999,213.75 REA - 700510
Abstract	This project will develop human-centred technologies that take into account actual real-world practices of humanitarian aid workers and provide policies for better protection and a more effective and efficient response. This project will build the iTRACK system, an integrated intelligent real-time tracking and threat identification system to improve protection of responders and assets and provide information management and logistics services such as real-time information updates and analyses as well as navigation, routing and scheduling. iTRACK will achieve this through an interdisciplinary, socio-technical approach, which will draw on the latest advances in sensor development, GIS, security and privacy, artificial intelligence, information management, risk analysis, and humanitarian logistics.
Website	http://www.itrack-project.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Unitversitetet I Agder (NO) Consortium: 2. Arttic (FR) 3. Information Management and Mine Action Programs INC (US) 4. Intrasoft International SA (LU) 5. Knowledge Now Limited (UK) 6. Svenska Handelshogskolan (FI) 7. Technische Universiteit Delft (NL) 8. Teknova AS (NO) 9. Teleplan Globe AB (NO) 10. Treelogica Telematica y Logica Racional para la Emprese Europea Sl (ES) 11. Trilateral Research Ltd (UK) 12. World Food Programme (IT)

PeaceTraining.eu	
Title	Strengthening the Capabilities and Training Curricula for Conflict Prevention and Peace Building Personnel with ICT-based Collaboration and Knowledge Approaches (PeaceTraining.eu) This project also corresponds to the category 'Training and networking'.
Contract details	H2020 Secure Societies Call: H2020-BES-2015 Topic code: BES-13-2015 September 2016 / October 2018 - EUR 1.499.920 REA/B/04 - 700583
Abstract	PeaceTraining.eu aims to analyse current practices and shortcomings of Conflict Prevention and Peace Building (CPPB) training programmes with a view to providing novel CPPB training methods, curricula and linked activities for CPPB personnel. Using a multidimensional modeling approach, the result is a PeaceTraining.eu Cube Model, which describes curricula structures including stakeholders, new methods, course structures, techniques, e-approaches, tools and entities. The PeaceTraining.eu Web Platform (www.peacetraining.eu) features a knowledge base, stakeholder maps, expert navigators, infographics, best practice libraries, and digital guidebooks as well as additional Training Curricula Setup Utilities and Search Tools for training centres and trainers. EU-level engagement activities include an International PeaceTraining.eu Symposium, thus increasing awareness on the topic while also attracting secondary target groups, including training course providers, educational institutions and trainers.
Website	https://project.peacetraining.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Synyo GmbH (AT) Consortium: 2. Arge Bildungsmanagement GmbH (AT) 3. Balti Kaitsekolledz (EE) 4. Bundesministerium fuer Inneres (AT) 5. Coventry University (UK) 6. Erdmann Daniel (DE) 7. Institute for Conflict Research (UK) 8. Peace Action, Training & Research Institute of Romania (RO) 9. Katholieke Universiteit Leuven (BE) 10. Kosovar Centre for Security Studies (XK) 11. Philipps Universitaet Marburg (DE) 12. Universidad de la Iglesia de Deusto (ES)

WOSCAP	
Title	Whole-of-Society Conflict Prevention and Peacebuilding (WOSCAP) ***This project also corresponds to the category 'Ethics, Societal implications'.***
Contract details	H2020 Secure Societies Call: H2020-BES-2014 Topic code: BES-12-2014 June 2015 / November 2017 - EUR 1.990.114,25 REA/B/04 - 653866
Abstract	This proposal seeks to enhance the EU capabilities for implementing conflict prevention and peacebuilding interventions through sustainable, comprehensive and innovative civilian means, while also addressing some of the dilemmas and paradoxes of external interventions that aim for local ownership in third countries. This will be achieved through the project's Review, Reflect, Recommend and Innovate objectives. 'Review' will assess past and ongoing CPPB initiatives of the EU and its partners in Georgia, Mali, Ukraine and Yemen (and beyond) focusing on three types of EU interventions: multi-track diplomacy, security sector reform, and governance reform. 'Reflect' will create a 'community of practice', providing multidisciplinary forums for dialogue that will be used to validate and apply the evidence base by focusing on cross-cutting themes: local ownership, gender, multi-stakeholder coherence, civil-military synergies and ICTs. 'Recommend' will elaborate a tailored set of recommendations enhanced through direct policy engagement and an international dissemination strategy. 'Innovate' will contribute significantly to civilian CPPB by identifying research priorities and tools, and enhancing the potential of ICTs. The project attempts to address the relationships of peacebuilding actors within a wider cultural and institutional context. It deals with issues of coordination, synergies and inclusivity of peacebuilding efforts, where diverse stakeholders have a role to play in the process.
Website	http://www.woscap.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Stichting Global Partnership for the Prevention of Armed Conflict (NL) Consortium: 2. Association Groupe ESSEC (FR) 3. Berghof Foundation Operations GmbH (DE) 4. Institut Svitovoi Politiki (UA) 5. Ivane Javakhishvili Tbilisi State University (GE) 6. London School of Economics and Political Science (UK) 7. Political Development Forum (YE) 8. Universitat Autonoma de Barcelona (ES) 9. Universite des Sciences Juridiques et Politiques de Bamako (ML) 10. Universiteit Utrecht (NL)

8.3.5 Training and Networking

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Training and Networking	CAST CRISIS ELITE ESENET GARTNET-E HYRESPONSE INDIGO L4S

These projects have been complemented by the following H2020 projects:

AUGGMED	
Title	Automated Serious Game Scenario Generator for Mixed Reality Training (AUGGMED) ***This project also corresponds to the categories 'Terrorist threats' and 'Organised crime'.***
Contract details	H2020 Secure Societies Call: H2020-FCT-2014 Topic code: FCT-07-2014 June 2015 / May 2018 - EUR 5,535,673.75 HOME - 653590
Abstract	Development of a serious game platform to enable single- and team-based training of end-users with different level of expertise from different organisations responding to terrorist and organised crime threats. Game scenarios include: advanced simulations of operational environments, agents, telecommunications and threats, and will be delivered through VR and MR environments with multimodal interfaces. The platform offers highly realistic training scenarios allowing advanced interactivity and a suite of tools for trainers.
Website	http://www.auggmed-project.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. BMT Group Ltd (UK) Consortium 2. Ferrocarrils de la Generalitat de Catalunya (ES) 3. Geomobile GMBH (DE) 4. ISRA-Team 98 Ltd (IL) 5. Kardaras Konstantinos (EL) 6. Ministry of Citizens Protection (EL) 7. Piraeus Port Authority SA (EL) 8. Police and Crime Commissioner for West Yorkshire (UK) 9. Serco Belgium SA (BE) 10. Sheffield Hallam Univ. (UK) 11. Sistema d'emergencies Mediques (ES) 12. Univ. of Birmingham (UK) 13. Univ. Politecnica de Madrid (ES) 14. Univ. of Greenwich (UK)

SEREN 3	
Title	Security Research NCP Network 3 (SEREN 3)
Contract details	H2020 Secure Societies Call: H2020-DRS-2014 Topic code: DRS-08-2014 May 2015 / May 2018 - EUR: 1,995,451.00 REA - 653450
Abstract	SEREN3 aims to facilitate trans-national co-operation among NCPs for Secure Societies, identifying and sharing good practices, and raising the general standard of the support to programme applicants across the EU, Associated and Third countries. To reach the objective above, the project will develop three main activity axes: (1) capacity building of NCPs; (2) strengthening the participation of relevant stakeholders to Horizon 2020 funding opportunities; (3) and supporting networking opportunities within the Secure Societies constituency. SEREN3 will also take into account the paradigmatic change brought by Horizon 2020. This will be reflected in particular in a stronger attention of the network in terms of multidisciplinary competences, consideration of related societal challenges, and linkage with other EU relevant initiatives, funding programmes and policies.
Website	http://www.seren-project.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Agenzia per la Promozione Della Ricerca Europea (IT) Consortium: 2. Agence Bruxelloise pour p'entreprise (BE) 3. Agencija za Mobilnost i Programe Europske Unije (HR) 4. Centro Para el Desarrollo Tecnologico Industrial (ES) 5. Centrum Vedecko Technickych Informacii Slovenskej Republiky (SK) 6. Council For Scientific And Industrial Research (ZA) 7. Dienst Voor Wetenschappelijke en Technische Informatie- Service D'information Scientifique et Technique (BE) 8. Foundation For Research And Technology Hellas (EL) 9. Idryma Proothisis Erevnas (CY) 10. Instytut Podstawowych Problemow Techniki Polskiej Akademii Nauk (PL) 11. Matimop - The Israeli Center For R&D (IL) 12. Rigas Tehniska Universitate (LV) 13. Romanian Space Agency (RO) 14. Sihtasutus Eesti Teadusagentuur (EE) 15. Technologicke Centrum Akademie Ved Ceske Republiky (CZ) 16. The Icelandic Centre For Research (IS) 17. Turkiye Bilimsel Ve Teknolojik Arastirma Kurumu (TR)

TARGET	
Title	Training Augmented Reality H2020 Secure Societies Generalised Environment Toolkit (TARGET)
Contract details	H2020 Secure Societies Call: H2020-FCT-2014 Topic code: FCT-07-2014 May 2015 / November 2018 - EUR: 5,992,359.75 REA - 653350
Abstract	TARGET will deliver a pan-European serious gaming platform featuring new tools, techniques and content for training and assessing skills and competencies of SCA (Security Critical Agents). Mixed-reality experiences will immerse trainees at task, tactical and strategic command levels with scenarios such as tactical firearms events, asset protection, mass demonstrations, cyber-attacks and CBRN incidents.
Website	http://www.target-h2020.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Arttic (FR) Consortium: 2. Atrisc (FR) 3. Cleveland Fire Authority (UK) 4. Deutsche Hochschule der Polizei (DE) 5. Ecole Nationale Superieure de la Police (FR) 6. Ecole Normale Superieure (FR) 7. Fachhochschule Der Polizei des Landes Brandenburg (DE) 8. Fraunhofer Gesellschaft zur Foerderung Der Angewandten Forschung E.V. (DE) 9. Inconnect Bv (NL) 10. Inconnect Vof (NL) 11. Institut De Seguretat Publica de Catalunya (ES) 12. Iscc Gmbh (AT) 13. Isem-Institut Pre Medzinarodnu Bezpecnost a Krizove Riadenie, No (SK) 14. Luxembourg Institute Of Science And Technology (LU) 15. Ministerio Del Interior (ES) 16. Oslo Center For Science In Society (NO) 17. Sisekaitseakadeemia (EE) 18. Universite Du Luxembourg (LU) 19. Vectorcommand Ltd (UK)

8.3.6 Protective equipment

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Protective equipment	FRESP IF REACT SMART@FIRE SMARTPRO

In Horizon2020, no dedicated research projects or studies have been carried out in the area of protective equipment.

9. Horizontal issues

9.1 Foresight studies on security threats & Roadmaps

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Foresight studies on security threats & Roadmaps	ANVIL CBRNEMAP ETTIS EVOCS FESTOS FOCUS FORCE

9.2 Standardisation, Testing & Certification

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Standardisation, Testing & Certification	CREATIF CRISP SLAM HECTOS

These projects have been complemented by the following H2020 projects:

ResiStand	
Title	Increasing disaster Resilience by establishing a sustainable process to support Standardisation of technologies and services (ResiStand)
Contract details	H2020 Secure Societies Call: H2020-DRS-2015 Topic code: DRS-06-2015 May 2016 / May 2018 - EUR: 1,962,553.75 REA - 700389
Abstract	The goal of ResiStand is to find new ways to improve the crisis management and disaster resilience capabilities of the European Union and individual Member States through standardisation. ResiStand identifies and analyses the drivers, constraints and expectations of main stakeholder communities.Based on this information, gaps in standardisation are identified and a prioritised roadmap for new initiatives will be created. The roadmap will be complemented by a critical evaluation of standards as a tool to improve disaster resilience.The aim is that stakeholders will continuously utilize this "ResiStand Process" in the future, and that the project delivers a better understanding of the potential of standards for contributing to an improved disaster resilience.
Website	http://resistand.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Geowise Oy (FI) Consortium: 2. Atos Spain Sa (SE) 3. D'appolonia Spa (IT) 4. Din Deutsches Institut Fuer Normung E.V. (DE) 5. European Virtual Institute For Integrated Risk Management Eu Vri Ewiv (DE) 6. Forsvarets Forskninginstitutt (NO) 7. Fraunhofer Gesellschaft zur Foerderung Der Angewandten Forschung E.V. (DE) 8. Nederlandse Organisatie Voor Toegepast Natuurwetenschappelijk Onderzoek TNO (NL) 9. Steinbeis Advanced Risk Technologies Gmbh (DE) 10. Stichting Nederlands Normalisatie – Instituut (NL) 11. Suomen Standardisoimisliitto Sfs Ry (FI) 12. Teknologian Tutkimuskeskus Vtt Oy (FI) 13. Treelogic Telematica Y Logica Racional Para La Empresa Europea Sl (ES) 14. Trilateral Research Ltd (UK)

9.3 Communication systems (Interoperability and communication with focus on security)

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Communication systems (Interoperability and communication with focus on security)	CRISYS DARIUS DESTRIERO EPISECC FREESIC SALUS SECTOR

These projects have been complemented by the following H2020 projects:

CIVILEX	
Title	Supporting European Civilian External Actions (CIVILEX) ***This project also corresponds to the category 'International cooperation and humanitarian aid'.***
Contract details	H2020 Secure Societies Call: H2020-BES-2015 Topic code: BES-11-2015 May 2016 / April 2017 - EUR 1.100.351,25 REA/B/04 - 700197
Abstract	CIVILEX aims to identify, characterise and model the communication and information systems in use within the EU Civilian missions, understand the stakeholders' requirements and provide possible solutions to tackle by a future interoperable Situational Awareness, Information Exchange and Operational Control Platform. The objective is to establish, by means of the proposed infrastructure, common understanding and enhance situational awareness about crisis management in EU civilian external actions. The project would take a hybrid approach, aiming both for a technical solution for information exchange (a platform that stimulates low-level, secure ad-hoc communities of interest) and for institutional changes (leading to agreements on exchange formats for civilian parties). The envisaged platform should facilitate the engagement of EU civilian actors (including CSDP missions, EU Delegations, ECHO offices and Member State Embassies), UN offices and other non-EU actors, as well as certain overlaps with military actors.
Website	http://www.civilex.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. ATOS Spain SA (ES) Consortium: 2. European Centre for Development Policy Management (NL) 3. European Union Satellite Centre (ES) 4. Fraunhofer Gesellschaft zur Foerderung der Angewandten Forschung E.V. (DE) 5. Istituto Affari Internazionali (IT) 6. Nederlandse Organisatie voor Toegepast Natuurwetenschappelijk Onderzoek – TNO (NL)

9.4 Information / Communication systems for Disaster Management

9.4.1 Communication systems / response coordination for first responders

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Communication systems / response coordination for first responders	DITSEF E-SPONDER ESS GERYON INFRA OD REDIRNET SECRIROM SPARTACUS

In Horizon2020, no dedicated research projects or studies have been carried out in the area of Communication systems / response coordination for first responders.

9.4.2 Communication systems with focus on disaster management (general)

As a cross-reference to previous projects funded under FP7 (see acronyms in the table below), the reader is invited to consult the CoU Mapping Document published in 2016 (see footnote 1) in which the following FP7 projects are described.

Research sub-category	FP7 projects
Communication systems with focus on disaster management (general)	C2-SENSE CRISCOMSCORE ISITEP SECINORE

These projects have been complemented by the following H2020 projects:

BROADMAP	
Title	Mapping Interoperable EU PPDR Broadband Communication Applications and Technology (BROADMAP)
Contract details	H2020 Secure Societies Call: H2020-DRS-2015 Topic code: DRS-18-2015 May 2016 / April 2017 - EUR 2,169, 137.50 HOME – 700380
Abstract	Collection and validation of the PPDR (Public Protection and Disaster Relief) organisations' existing requirements with the aim to establish a core set of specifications, and define transition roadmaps for research and standardisation for the future evolution of European interoperable radio communication solutions for public safety and security, within legal procurement constraints. Additional aims are to improve PPDR's service to Europe's citizens and enhance interoperability across borders. The project includes nuances of societal differences, including different cultures, geography, processes and legal frameworks.
Website	http://www.broadmap.eu/

BROADMAP	
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Public Safety Communication Europe Forum AISBL (BE) Consortium 2. An Garda Siochana (IE) 3. Bayerisches Rotes Kreuz (DE) 4. De Gaulle Fleurance & Associes (FR) 5. Direktoratet for Nodkommunikasjon (NO) 6. Kentro Meleton Asfaleias (EL) 7. Magen David Adom (IL) 8. Ministere de l'Interieur (FR) 9. Ministerio del Interior (ES) 10. Ministero dell'Interno (IT) 11. Ministry of Interior (HR) 12. Ministry of Security - Bosnia and Herzegovina (BA) 13. Ministry of the Interior (FI) 14. Myndigheten for Samhallsskydd och Beredskap (SE) 15. Pelastusopisto (FI) 16. Poliisihallitus (FI) 17. Polismyndigheten (SE) 18. Politidirektoratet (NO) 19. Service Public Federal Interieur (BE) 20. Serviciul de Telecomunicatii Speciale (RO) 21. National Police of the Netherlands (NL)

EMYNOS	
Title	nExt generation eMergencY commuNicatiOnS (EMYNOS)
Contract details	H2020 Secure Societies Call: H2020-DRS-2014 Topic code: DRS-19-2014 September 2015 / March 2018 - EUR: 4,130,493.00 REA - 653762
Abstract	The main objective of EMYNOS project is the design and implementation of a Next Generation platform capable of accommodating rich-media emergency calls that combine voice, text, and video, thus constituting a powerful tool for coordinating communication among citizens, call centers and first responders. Additionally, issues such as call routing/redirection to the closest-available call center, retrieval of the caller location, hoax calls prevention, support for people with disabilities, and integration of social media will be addressed. EMYNOS will enable users to make emergency calls across heterogeneous devices using various mature technologies.
Website	https://www.emynos.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Fraunhofer Gesellschaft Zur Foerderung der Angewandten Forschung E.V. (DE) Consortium: 2. Harpo Sp. Z O.O. (PL) 3. Hellenic Open University (EL) 4. MCS Datalabs (DE) 5. Navcert GMBH (DE) 6. Oecon Products & Services GMBH (DE) 7. Osterreichisches Rotes Kreuz (AT) 8. Osterreichisches Rotes Kreuz Landesverband Steiermark (AT) 9. Public Safety Communication Europe Forum Aisbl (BE) 10. Serviciul de Telecomunicatii Speciale (RO) 11. Technological Educational Institute of Crete (EL) 12. Turksat Uydu Haberlesme ve Kablo Tv Isletme AS (TR) 13. Voztelecom Sistemas S.L. (ES)

NEXES	
Title	NEXt generation Emergency Services (NEXES)
Contract details	H2020 Secure Societies Call: H2020-DRS-2014 Topic code: DRS-19-2014 May 2015 / May 2018 - EUR: 5,760,836.00 REA - 653337
Abstract	NEXES aims to research, test and validate the integration of IP-based communication technologies and interoperability into the next generation emergency services. NEXES innovates the approach to the dynamics between emergency services and citizens, allowing (i) the use of total conversation capabilities in emergencies, (ii) the exploitation of improved location information, (iii) the leverage of Internet-enabled connectivity to enhance interoperability and shared awareness among emergency services.
Website	http://nexes.eu/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. Rinicom Limited (UK) Consortium: 2. Aimtech Consulting Limited (UK) 3. Ambulance and Emergency Physicians Association (TR) 4. Azienda Regionale Emergenza Urgenza (IT) 5. Deveryware (FR) 6. European Union of the Deaf Aisbl (BE) 7. Insta Defsec OY (FI) 8. Institute of Communication and Computer Systems (EL) 9. Ministerio Dell'Interno (IT) 10. Omnitor AB (SE) 11. Orange Romania SA (RO) 12. Police and Crime Commissioner for West Yorkshire (UK) 13. Poliisiammattikorkeakoulu (FI) 14. Prefecture de Police (FR) 15. Teamnet International SA (RO) 16. Telekom Slovenije DD (SI) 17. Univ. v Ljubljani (SI)

ShaMROCK	
Title	Secure professional Mobile Radio Over Commercial networKs (ShaMROCK)
Contract details	H2020 Secure Societies Call: H2020-SMEINST-1-2014 Topic code: DRS-17-2014-1 February 2015 / July 2015 - EUR: 50,000.00 EASME - 663021
Abstract	ShaMROCK will deliver a broadband Professional Mobile Radio(PMR) system running over standard cellular networks. Such a system is used by Emergency Services and Professionals to firstly, reduce costly dependency on dedicated networks, to secondly, increase communication resilience and network reliability and thirdly, to support a new generation of point-of-use urban infrastructure protection applications.
Website	http://www.genaker.net/
Consortium (prone to modification in case of GA amendment)	Coordinator: 1. ESI Mobile Solutions SL – Genaker (ES)

10. WAY AHEAD

Most policies dealing with Disaster Risk and Crisis Management have established operational links with research. For example, the CBRN and Explosive Action Plans include the goal to strengthen and prioritise research. Furthermore, an engagement in further research cooperation with international partners is promoted with a view to enhancing synergies and avoiding duplications, using existing scientific networks, taking into account the research work performed by EDA, JRC and ESRIF (expired in 2009), organisation of periodic meetings by the Commission. While interactions among research and policies are high on the policy agenda, much remains to be done to improve the way information flows from the different communities involved in implementation of both research outputs and policies. This includes capitalizing on past research and enhancing cooperation among EU Member States organisations. The complexity of the security sector stems from the wide variety of actors involved and the lack of coordination mechanism at EU and national level regarding the transfer of information and their actual use by implementers and decision-makers. The need for enhanced coordination and information sharing form the basis of the Community of Users on Safe, Secure and Resilient Societies described in this paper.

Prior to developing a Community of Users (based on existing communities which are presently fragmented) with the view of improving science-policy-industry-operator's links in the context of Horizon2020, it was essential to **understand the architecture** of the research framework and how it interacted with various policy technical/ scientific challenges. This was the subject of the mapping carried out for FP7 projects and now H2020 projects from the 2014-2015 calls, as well as ISF projects, which are described in the present document. These should not be regarded as an impact assessment (i.e. no analysis was done about the actual impact and use of research outputs on policies) but rather as a means to better understand the complex science-policy working environment at EU and national levels and propose a mechanism to **streamline information flows and transfer in the future**. The analytical value of the document stands for the "matrix" established between research and science, i.e. a factual image of the present situation. For the time being, it does not go as far as analysing the real outputs of research regarding policy implementation but complements the work of the Commission's Disaster Risk Management Knowledge Centre (DRMKC) which intends to improve science-based services and analysis, the use and uptake of research and operational knowledge as well as to advance science and technology in DRM.

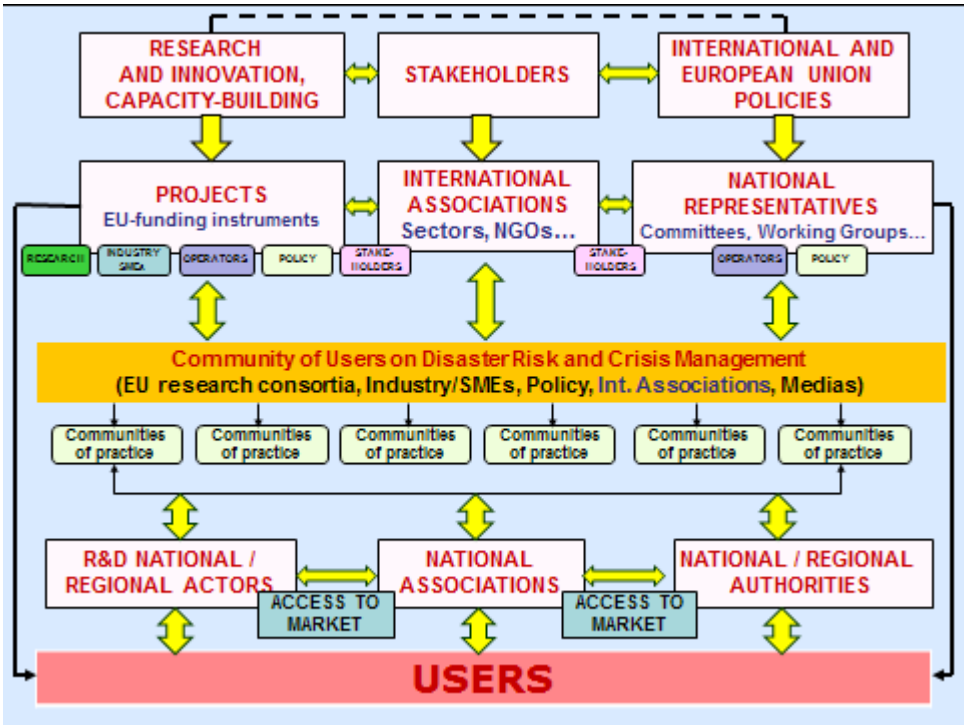
Based on this report (complementing the FP7 mapping), CoU objectives will be pursued, from the short to the long term, as described in details in Section 2 "Tasks and objectives". Besides the technical objectives and the coordination of a better information exchange system, the Community of Users on the long term has the capacity to rise sharing of experiences among different actors involved in disaster risk and crisis management, with possible initiatives leading to synergies in the EU and beyond.

What is at stake here is to create a mechanism involving different levels (EU, national and regional) by which the different actors, and primarily the "users", will be able to rapidly trace back information and experiences issued from research, capacity-building and training projects, giving them the possibility to identify and contact right persons at the right time to get the feedback that they are looking for via the CoU dedicated website. Regular information exchanges and debates orchestrated by the Community of Users have readily enabled to better channel the information to the "users", which will have a direct effect on research programming, policy implementation and update. It will also have an effect on the involvement of end-users at various levels, e.g. in steering committees of Horizon 2020 projects, consortia, and cater links between research projects and capacity-building / training initiatives, e.g. making links with training programmes and centres, modules exercises, etc.

The Community of Users has the potential to become a useful complementary supporting group on research related activities to EU security policies (not duplicating existing advisory groups dealing with policy implementation but rather channelling information about research outputs) in the framework of which the European Commission with the EU Member States (through the policy and programme committees), EU Agencies, Intergovernmental Agencies, International Organisations and the wide range of sectors concerned (research, industry, operators) will cooperate for boosting implementation of research outputs, including their usability for policy implementation in the Member States (through information given to relevant existing committees and advisory groups). This will in addition have the capacity of returns of experiences from Industry and practitioners to the EU level, and enable to identify the most potential technologies, tools and methods in order to support their access to the market.

The Community of Users, along with the DRMKC, now enable to better visualise / identify research (and on the long term capacity-building and education) projects related to different themes relevant to safety, security and resilience. While this network is progressively establishing "horizontal" dialogues and helping interactions among different disciplines and actors, it will not have the capacity to create operational links with users at large without dedicated thematic networks (referred to as "Communities of practice").

Linking CoU to Communities of practice

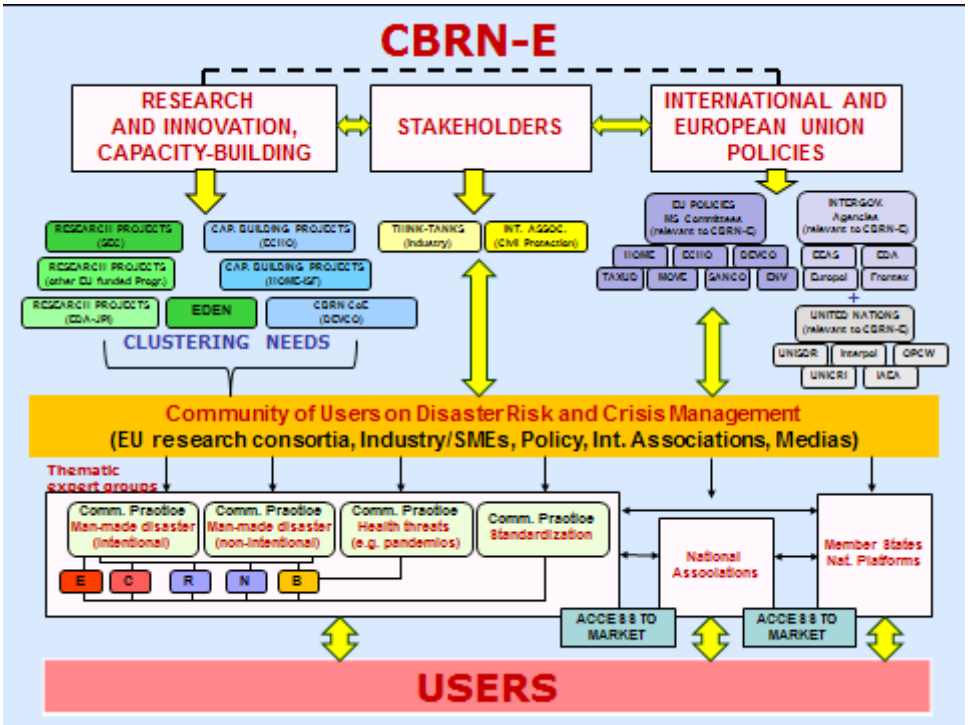


This need for "vertical" transfer of information from the EU to the national and the regional levels could be fulfilled by connecting the CoU to appropriate expert networks or communities, either existing or to be developed, that would play the role of knowledge integrating and "translating" bodies at European levels, with the mission – in support and in connexion with MS authorities – to effectively relays research outputs (e.g. new tools or technologies, methods etc.) to appropriate users at national, regional and even local levels. This process of pulling EU research outputs to users, i.e. transforming these outputs into outcome, can only be possible through an effective partnership with users. In other words, if the CoU provides on a regular basis information on new tools / technologies or other research information, different "communities of practice" might format this information to address different categories of users (policy-makers, scientists, industry/SMEs, practitioners, civil society) and undertake ad-hoc actions to ensure that potentials of EU research developments are known

and possibly applied by them. This flow of information would enable that we do not miss opportunities (or duplicate work) and would also create effective bridges among the EU down to the citizen's level with possible feedback received and contributing to further research programming.

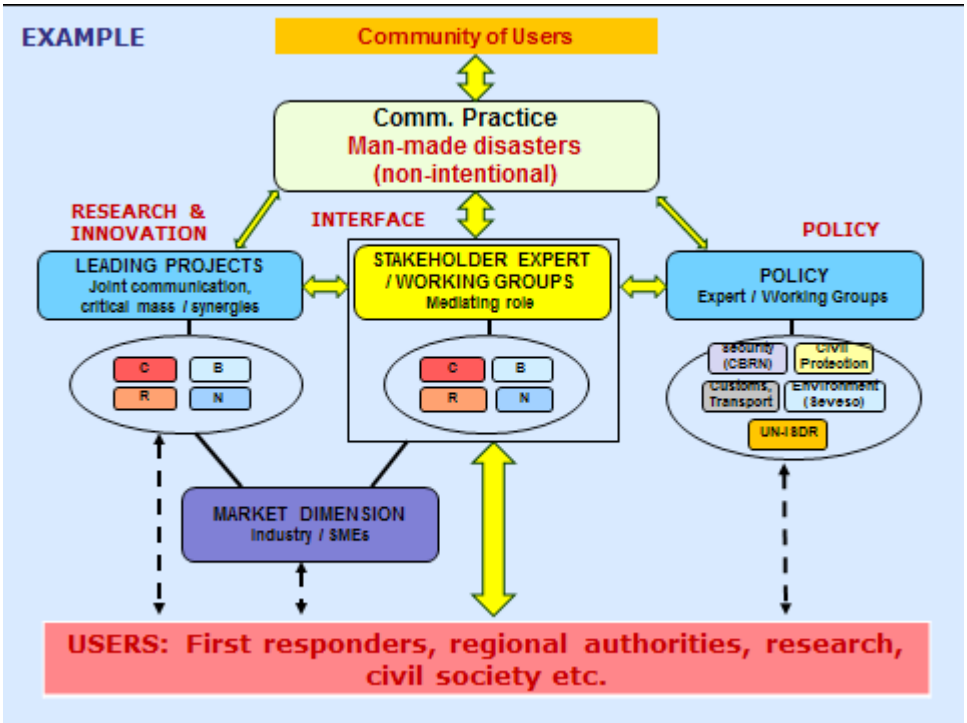
Two examples are given below to illustrate this purpose. In the CBRN-E area, the CoU will continue its efforts in identifying relevant projects funded by different (research, capacity-building) programmes with the aims to propose clustering initiatives through platforms of information exchanges. Stakeholders will continue to interact with these programmes to help interfacing with relevant policies. The CoU is naturally not interfering with policy development and implementation, but contacts are readily established with different policy bodies, enabling to inform users about possible updates and helping research information to be efficiently disseminated to policy actors. The "Community of practice" need to be activated to relay ad-hoc information to users as shown below.

Main actors in the CBRN-E area



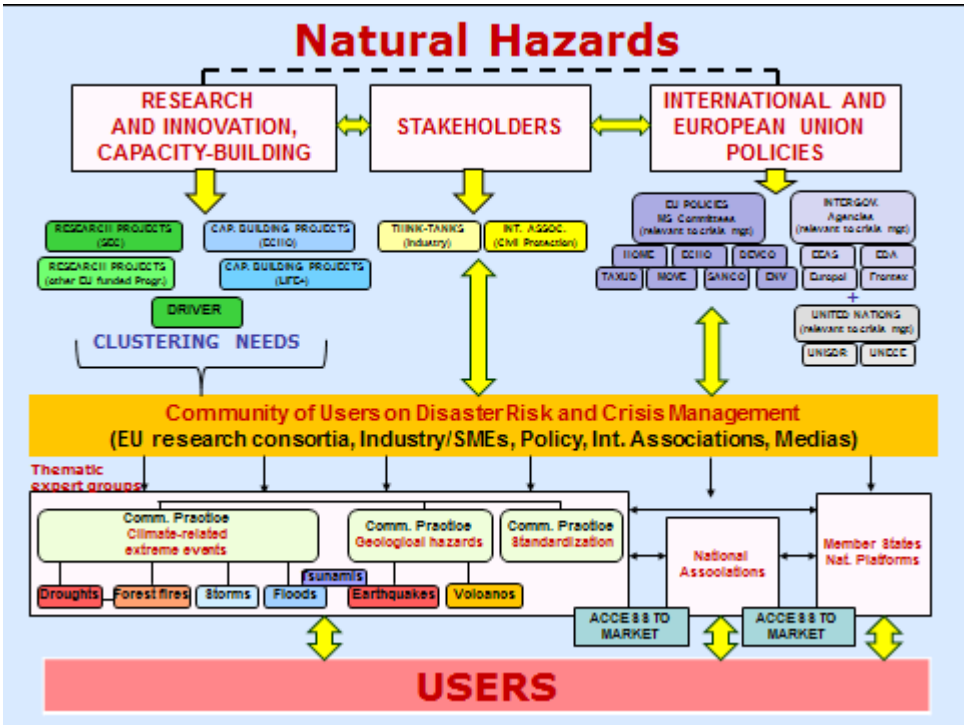
Zooming into the CBRN picture, this would imply that each Community of practice gets a comprehensive overview of leading projects in their area (research, capacity-building, training / education), help bringing these projects together if and when possible so that synergies and a critical mass may be built-up. Interfacing among research & innovation and other actors in the industry and policy areas should be facilitated by stakeholder expert / working groups with a mediating role, i.e. able to translate / format the information to target speciticially different users (e.g. specific technology information addressed to industry, support to a specific policy action with reference to the appropriate regulation ect.). In bridging the different "worlds", there is a greater chance that users will get better channelled information as the knowledge base would in principle become consolidated and made known to a wide range of different actors.

Channelling information in the CBRN area

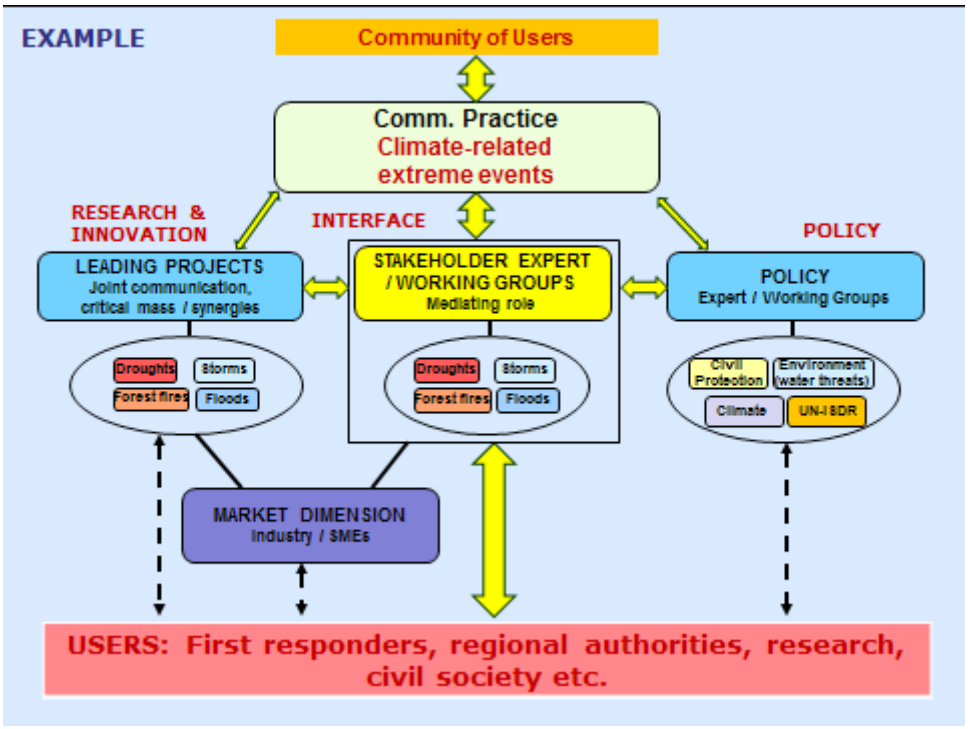


The same can be examplified in the area of natural hazards, taking into consideration the different "communities" and hazards.

Main actors in the Natural Hazards area



Channelling information in the Natural Hazards area



In conclusion, the Community of Users has the vocation to act as a facilitating platform, creating links and dialogues among different actors / disciplines (the "horizontal level") and among different levels (from EU to local). Based on the present mapping, a similar architecture has been used to develop a website which will facilitate information searches (not repeating what is readily in place but rather providing paths helping users to more easily find information per themes / areas). This mapping will be complemented on a regular basis (annually) for H2020 and other projects, and the CoU will pursue the organisation of gathering events to consolidate a culture of exchanges at EU level for the sake of improved safety, security and resilience of our societies.

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