



European  
Commission



# EU Security Research

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## **Summary**

*The Horizon 2020 Secure Societies programme represents by far the most significant source of funding in Europe for the development of security technology and innovation.*

### **Why EU security research?**

*The challenge is about undertaking the research and innovation activities needed to mitigate risks and contribute to the protection of citizens, society and economy.*

*Disasters can come in any shape or size. A strong EU-wide security framework is a necessity, for better predictive, reactive and resilience-based capabilities if/ when adversity strikes.*

### **Which kind of research?**

- An open challenge led and mission driven approach.*
- Reducing the barrier to the cross-border dissemination of research outcomes.*
- Engagement to create social trust in research-based security policies.*

### **How?**

*Projects are structured around the collaboration among practitioners, academia, industry.*

### **Who cares?**

*Innovation outpaces the capacity for regulatory oversight. Unfortunately, crime, terrorism or natural catastrophes do not conform to the institutional aspiration of a predictable, long view of events and consequent policy responses.*

*Institutional bodies tasked with prevention and protection must invest in the long term.*

*Industry also needs to take the longer view to exploit the greater market opportunity the EU can offer.*



## ***EU Treaty Title XIX - Research and technological development and space***

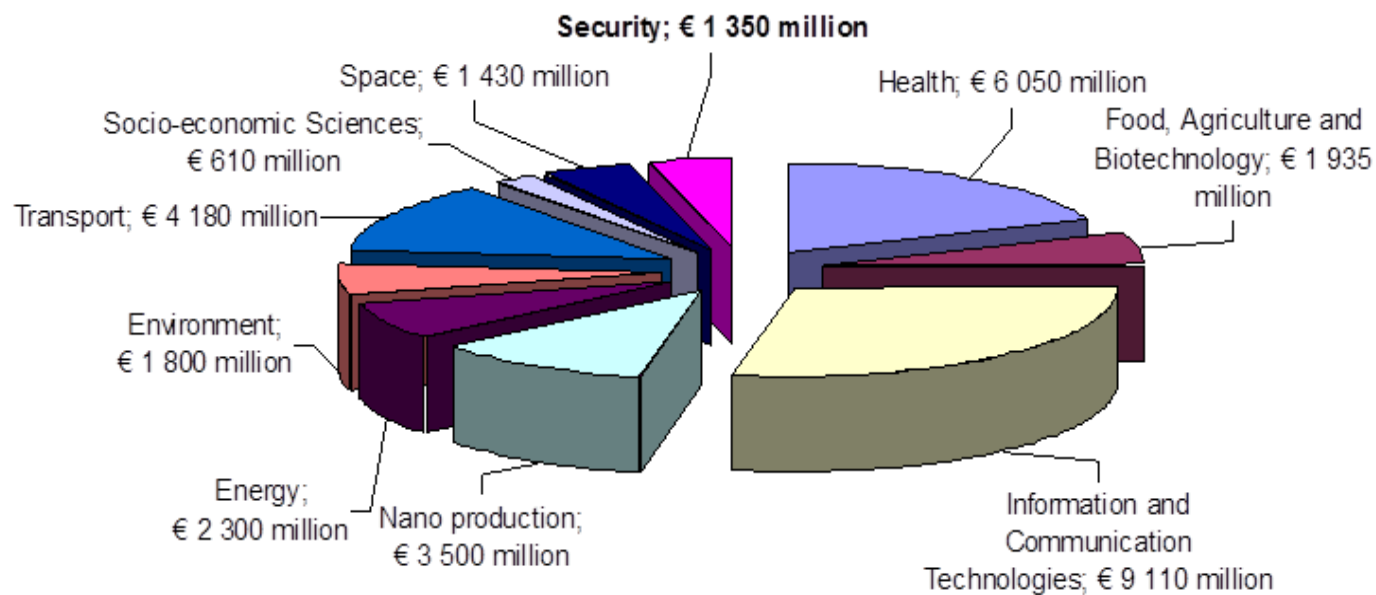
### *Policy objectives:*

- *Contribute to setting up a European Research Area and Innovation,*
- *Generate knowledge in areas of interest to EU policies,*
- *Support the competitiveness of industry.*

### ***PRINCIPLES:***

- *Framework Programmes /Annual Work Programmes / Calls for proposals*
- *Collaborative R&D Min 3 entities from 3 countries*
- *Competitive selection based on Peer Review*
- *Grants (subventions): calls for proposals (shared costs, IPR to proposers)*

# 7<sup>th</sup> Framework Programme for R&D (FP7), Security Research is included for the 1<sup>st</sup> time



# FP7 (2007 – 2013) Security Research:



**1.35 B€: EU funding**

**~50% of total (European) civil Security R&D**

***More than 300 projects and 1,500 participating entities***

[http://ec.europa.eu/dgs/home-affairs/what-we-do/policies/industry-for-security/docs/security\\_research\\_fp7\\_catalogue\\_part1\\_en.pdf](http://ec.europa.eu/dgs/home-affairs/what-we-do/policies/industry-for-security/docs/security_research_fp7_catalogue_part1_en.pdf)

[http://ec.europa.eu/dgs/home-affairs/what-we-do/policies/industry-for-security/docs/security\\_research\\_fp7\\_catalogue\\_part2\\_en.pdf](http://ec.europa.eu/dgs/home-affairs/what-we-do/policies/industry-for-security/docs/security_research_fp7_catalogue_part2_en.pdf)

- Increasing the Security of Infrastructures and Utilities 20.0 %
- Increasing the Security of the Citizens 21.0 %
- Intelligent Surveillance and enhancing Border Security 15.6 %
- Restoring Security and Safety in case of Crisis 22.8 %
- Security systems Integration, Interconnectivity and Interoperability 7.2 %
- Security and Society 8.4 %
- Security research coordination and structuring 5.0 %

*Only seven EU Member States have national security research programmes. This means that a majority of the Member States rely on the Commission for the R&D needs in the field of security. The Commission Security Research programme is now recognised as the central actor and federator in security research in the EU.*

# Aviation Security: an evolving policy and regulatory environment



*Prior to 11 September 2001 EU had no legislative competence in aviation security (responsibility of each EU Member State).*

*Common rules established in 2002, with framework regulation N° 2320/2002.*

*A more detailed harmonisation of EU rules became necessary: initial regulation was replaced by (EC) N° 300/2008.*

*Today common basic standards apply at EU level, comprising screening of passengers, cabin and hold baggage, airport security (access control, surveillance), aircraft security checks and searches, screening of cargo and mail, screening of airport supplies, staff recruitment and training.*

*Since 1 June 2012, EU and U.S. recognize each other's air cargo security regime.*

*In 2016 the whole set of implementing legislation was updated, with Commission implementing Regulation (EC) N° 2015/1998.*

# Topics of interest as in yearly work programmes



*SEC-2007-1.3-01 Stand-off scanning and detection of hidden dangerous materials, objects or stowaways, fast and reliable alerting and specification*

*SEC-2007-2.3-01 Detection of unattended goods and of owner*

*SEC-2007-3.2-03 Integrated check points security*

*SEC-2009.1.3.3 Properties of improvised explosive devices, additives to precursors to explosives to prevent precursors from being used to manufacture explosive devices*

*SEC-2009.2.2.2: Integrated comprehensive approach to airport security*

*SEC-10.2.4-1 New concepts to meet the requirements for the protection of civil/ commercial aviation*

*SEC-2011.2.2-1 Airport checkpoints - Integration Project*

*SEC-2012.2.2-3 Improving security in air cargo transport – Integration Project*

*SEC-2012.2.2-4 A common EU aviation security requirement to reduce costs and facilitate passenger flows*

*SEC-2012.3.4-5 Further research and pilot implementation of Terahertz detection techniques*

*DRS-16-2014: Improving the aviation security chain*

*BES-8-2015: Development of an enhanced non-intrusive (stand-off) scanner*

*BES-14-2014: Human factors in border control*

# Some R&D projects related to airport security



[fp7-terascreen.com](http://fp7-terascreen.com) Multi-frequency multi-mode Terahertz screening for border checks  
Coord: Alfa Imaging

[www.consortis.eu](http://www.consortis.eu) Concealed Object Stand-Off Real-Time Imaging for Security  
Coord: VTT

[www.subito-project.eu](http://www.subito-project.eu) Surveillance of Unattended Baggage and the Identification and Tracking of the Owner  
Coord: SELEX UK

[www.xp-dite.eu](http://www.xp-dite.eu) Accelerated Checkpoint Design Integration Test and Evaluation  
Coord: TNO

<https://www.youtube.com/watch?v=9NiG4Eh8VT0> (TASS) Total Airport Security System  
Coord: Verint System Ltd

[www.euroskyproject.eu](http://www.euroskyproject.eu) Single European Secure Air-cargo Space  
Coord: BMT

[www.copra-project.eu](http://www.copra-project.eu) Comprehensive European Approach to the Protection of Civil Aviation  
Coord: Fraunhofer

[www.fly-sec.eu](http://www.fly-sec.eu) Optimizing time-to-FLY and enhancing airport SECURITY  
Coord: Demokritos

<http://h2020mesmerise.eu/> Multi-Energy High Resolution Modular Scan System for Internal and External Concealed Commodities  
Coord: Univ. Alcalà



## EU action plan on the security of explosives

[http://ec.europa.eu/dgs/home-affairs/what-we-do/policies/crisis-and-terrorism/explosives/index\\_en.htm](http://ec.europa.eu/dgs/home-affairs/what-we-do/policies/crisis-and-terrorism/explosives/index_en.htm)

*EU role: bring actors together and facilitate cooperation between Member States*





Prevent

PREVAIL  
HOMER

Detect

OPTIX  
COMMONSENSE  
SALIENT  
LOTUS  
EMPHASIS  
BONAS

React

HYPERION  
FORLAB  
AVERT  
SUBCOP

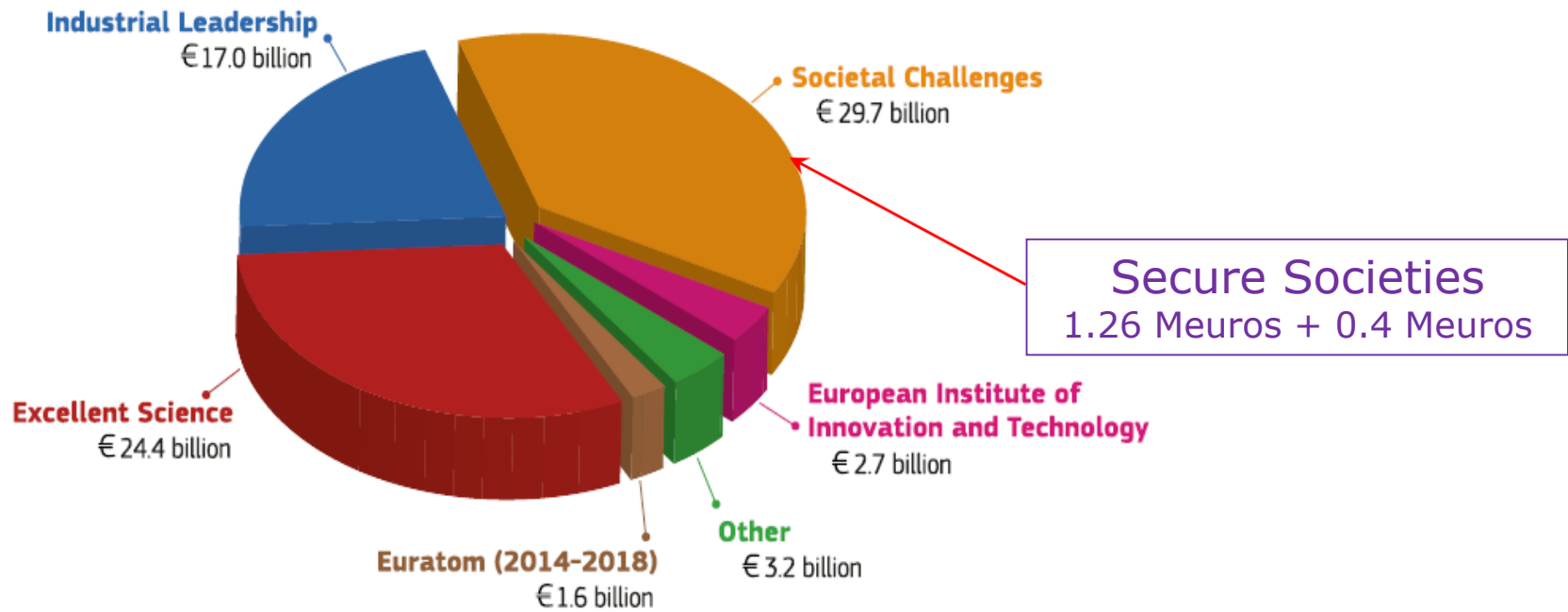
Mitigate

ENCOUNTER

# Some other R&D projects related to detection technologies as for check-points



- |   |   |  |
|---|---|--|
| <a href="http://www.sniffer-project.eu">www.sniffer-project.eu</a>                                    | <i>Bio-mimicry enabled artificial sniffer.</i>  | <i>Coord: CEA</i>                                      |
| <a href="http://www.fp7-doggies.eu">www.fp7-doggies.eu</a>  | <i>Mid Infrared and ion mobility spectroscopy</i>   | <i>Coord: Institut National de Police Scientifique</i> |
| <a href="http://www.sniffles.eu">www.sniffles.eu</a>  | <i>Miniaturised mass spectroscopy.</i>  | <i>Coord: TWI Ltd</i>                                  |
| <a href="http://www.handhold.eu">www.handhold.eu</a><br><i>sensors for CBRNE</i>                      | <i>Handheld Olfactory Detector via integrated miniaturised</i>  | <i>Coord: Queens' University Belfast</i>               |
| <a href="http://www.custom-project.eu">www.custom-project.eu</a>                                      | <i>Drugs and precursor detection via Photo Acoustic Spectroscopy and the UV induced Fluorescence.</i> | <i>Coord: Selex SI</i>                                 |
| <a href="http://www.snoopy-project.eu">www.snoopy-project.eu</a><br><i>from sweat odour</i>           | <i>Sniffer for the detection compounds arising in particular</i>                                      | <i>Coord: University of Brescia</i>                    |
| <a href="http://www.modes-snm.eu">www.modes-snm.eu</a>  | <i>Detection of shielded Special Nuclear Material</i>   | <i>Coord: University of Padova</i>                     |
| <a href="http://www.conphirmer.eu">www.conphirmer.eu</a><br><i>Radiofrequency Methods in Realtime</i> | <i>Counterfeit Pharmaceuticals Interception using</i>   | <i>Coord: King's College London</i>                    |
| <a href="http://www.crimtrack.eu/">http://www.crimtrack.eu/</a><br><i>substances</i>                  | <i>Sensor system for detection of criminal chemical</i>   | <i>Coord: Technical University of Denmark</i>          |





## OBJECTIVES (as in legal basis)

- 1. Fight crime, illegal trafficking and terrorism, including understanding and tackling terrorist ideas and beliefs**
- 2. Protect and improve the **resilience** of critical infrastructures, supply chains and transport modes**
- 3. Strengthen security through border management**
- 4. Improve **cyber security****
- 5. Increase Europe's **resilience** to crises and disasters**
- 6. Ensure **privacy and freedom**, including in the Internet and enhancing the societal legal and ethical understanding of all areas of security, risk and management**
- 7. Enhance standardisation and interoperability of systems, including for emergency purposes**
- 6. Support the Union's external security policies including through conflict prevention and peace-building**

# Secure Societies: Structure of yearly Work Programmes

4 separate / parallel calls for proposals



- ✓ **Disaster Resilient Societies (DRS)**
  - ✓ Crisis management and civil protection, critical infrastructure protection  
*2014: 80.40 M€, 2015: 89.73 M€, 2016: 19.50 M€, 2017: 23.75 M€*
- ✓ **Fight against Crime and Terrorism (FCT)**
  - Forensics, law enforcement capabilities, ethical/societal dimension  
*2014: 56.77 M€, 2015: 42.16 M€, 2016: 44.20 M€, 2017: 54.00 M€*
- ✓ **Border and External Security (BES)**
  - Surveillance/crossing points, information management, supply chain (at border) security  
*2014: 20.78 M€, 2015: 42.17 M€, 2016: 34.00 M€, 2017: 36.00 M€*
- ✓ **Digital Security (DS)**
  - Privacy, access control, trust e-Services, Secure information sharing  
*2014: 47.04 M€, 2015: 50.21 M€, 2016: 63.50 M€, 2017: 56.10 M€*

## **Work-programmes:**

[http://ec.europa.eu/research/participants/data/ref/h2020/wp/2014\\_2015/main/h2020-wp1415-security\\_en.pdf](http://ec.europa.eu/research/participants/data/ref/h2020/wp/2014_2015/main/h2020-wp1415-security_en.pdf)

[http://ec.europa.eu/research/participants/data/ref/h2020/wp/2016\\_2017/main/h2020-wp1617-security\\_en.pdf](http://ec.europa.eu/research/participants/data/ref/h2020/wp/2016_2017/main/h2020-wp1617-security_en.pdf)

## **Catalogue of projects:**

[http://ec.europa.eu/dgs/home-affairs/what-we-do/policies/industry-for-security/docs/828s\\_catalogue\\_h2020\\_exe\\_en.pdf](http://ec.europa.eu/dgs/home-affairs/what-we-do/policies/industry-for-security/docs/828s_catalogue_h2020_exe_en.pdf)



**CIP-01-2016-2017:** Prevention, detection, response and mitigation of the combination of physical and cyber threats to the critical infrastructure of Europe.

Scope: Proposals should focus on one of the following critical infrastructures: Water Systems, Energy Infrastructure (power plants and distribution), **Transport Infrastructure** and means of transportation, Communication Infrastructure, Health Services, Financial Services.

20 M€ in 2016 and 20 M€ in 2017

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**SEC-21-GM-2016-2017:** Pan European Networks of practitioners and other actors in the field of security (**possibly those active in airport security**)

15.50 M€ in 2016 and 16.30 M€ in 2017

*A practitioner is someone who is qualified or registered to practice a particular occupation, profession in the field of security or civil protection.*



\* *Sir Julian King appointed new Commissioner for Security Union (21/9/2016)*

<http://www.consilium.europa.eu/en/press/press-releases/2016/09/19-julian-king-new-commissioner-for-security-union/>

\* *Commission has proposed a regulation establishing a EU certification system for aviation security equipment and to promote a more competitive security industry (7/9/2016)*

COM(2016) 491 final

[http://europa.eu/rapid/press-release\\_IP-16-2943\\_en.htm](http://europa.eu/rapid/press-release_IP-16-2943_en.htm)

*The introduction of an EU certificate will allow equipment approved in one Member State also to be put on the market in others.*

\* *Discussion on-going for a Focus Area in Horizon 2020: "Supporting the Security Union" (to explicitly refer also to Transport Security).*



# Conclusions



*Threats have increased and are likely to remain for years.*

*Circumstances call for measures to address such issues in the long-term, i.e. with investments in Security research.*

*Intrinsic challenge for EU R&D to deliver "quick" and "usable" results.*

*Efforts to proactively involve end-users / practitioners.*

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*Thank you for your attention!*

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

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