



EUROPEAN
COMMISSION

Community research

The EU SDR Initiative

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DG ENTR*

**Seventh
Framework
Programme
2007-2013**



FP7 Security Research



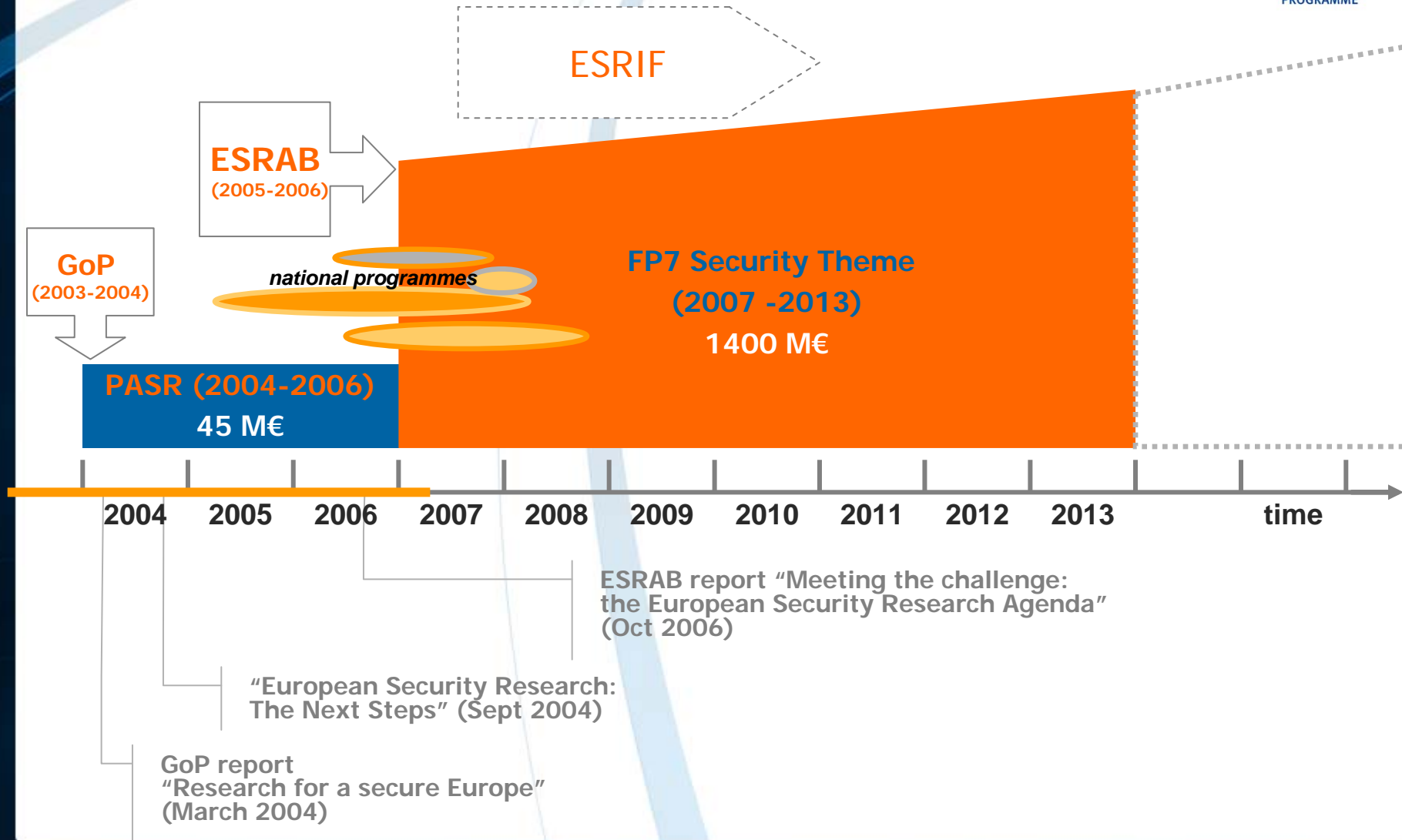
What it is... ... and what it is NOT

(i.e. it complements other programmes)

Civil	Defence oriented
Dealing with technology oriented & socio-economic issues	Only technology orientated
Referring to antagonistic acts (terrorism, crime, but also industry accidents and natural disasters)	Dealing with safety issues
Incident related (before / while / after, and trying to prevent, protect, prepare, respond, recover)	Looking at general considerations of the development of society, policy, environment, climate etc. that might eventually lead to security incidents
Supporting security policies; targeting at 4 political missions & 3 cross cutting domains	Inviting research beyond these domains and/or not referring to WP topics (except in case of urgent political need)
Developing applied technologies / systems / solutions, always involving the end user!	Doing basic research and purely upstream technology development



Evolution of European security research





FP7 2007 – 2013

■ SP Cooperation

32.413 M€

1. Health
2. Food, Agriculture & Biotechnology
3. **Information & Communication Technologies**
4. Nanosciences, Nanotechnologies, Materials & new Production Technologies
5. Energy
6. Environment (including Climate Change)
7. Transport (including Aeronautics)
8. Socio-economic Sciences & Humanities
9. Space
10. **Security**

1.400 M€



Security theme in FP7 2007 – 2013

- **4 Security missions / activities:**
 1. Security of citizens
 2. Security of infrastructure and utilities
 3. Intelligent surveillance and border security
 4. **Restoring security and safety in case of crisis**

- **3 Cross cutting activities:**
 5. **Security systems integration, interconnectivity and interoperability**
 6. Security and Society
 7. Security Research coordination and structuring



Activity 4 - Overview

- Activity 4 - Restoring Security & Safety in Case of Crisis
- The first challenge of this activity is to ensure that governments, first responders and societies are better *prepared* prior to **unpredictable catastrophic incidents** using new, innovative and affordable solutions.
- The second challenge is to improve the tools, infrastructures, procedures and organisational frameworks to **respond and recover** more efficiently and effectively **both during, and after, an incident**.
- Three areas are to be addressed, namely incidents caused by:
 - (1) terrorism and (organised) crime, including the use of conventional explosive weapons and weapons of mass destruction and disruption (e.g. CBRNE);
 - (2) natural disasters including pandemics; and
 - (3) major industrial accidents or technological disasters. Many of the relevant capabilities would also be suitable for deployment in humanitarian crises.



Wireless communication for EU crisis management

(FP7-SEC 4.2.4)



- The task is to build upon recent efforts on the software defined radio (SDR) architecture standard shared at European level and based upon the software communications architecture (SCA) concepts.
- The work consists of specifying, designing and developing a security referential platform including high data rate waveforms (software defining the services, communication protocols, interfaces, algorithms, security features, spectrum use, etc. for SDR) for security applications.
- The objective is to improve seamless communication between European security organisations and to demonstrate interoperability by means of deploying the SDR concept, architecture, and common information security architecture and defining and validating a new proposal for a security waveform for EU crisis management operations by demonstrating the portability of this security waveform between different referential platforms.



Security Research SDR Projects

- **WINTSEC (PASR-2006):**
 - Coordinator Thales - Contract signed **02/01/2007**
 - Duration 24 month, Value 3,7 M€, Consortium 22 partners / 12 nat.

- **EULER (SEC-2007) :**
 - Coordinator Thales - Contract to be signed **1st half 2008**
 - Duration 36 month, Value tbd (10-20 M€) ; Cons. 19 partners / 10 nat.

- **SECRICOM (SEC-2007) :**
 - Coordinator QinetiQ - Contract to be signed **1st half 2008**
 - Duration 44 months, Value tbd (10-20 M€) ; Cons. 13 partners / 9 nat.
 - SECRICOM provides a solution or mitigates problems of contemporary crisis communication infrastructures (Tetra, GSM, Citizen Band, IP)



EULER main innovative aspects

- High-data-rate waveform for sec applications
 - WiMax profile for HLS
 - Based on large industrial investments and well accepted standard
 - Fits HLS requirements (Urban, Mesh, Mobility, QoS, ...)
 - Including spectrum access protocols for fast deployment (CR)

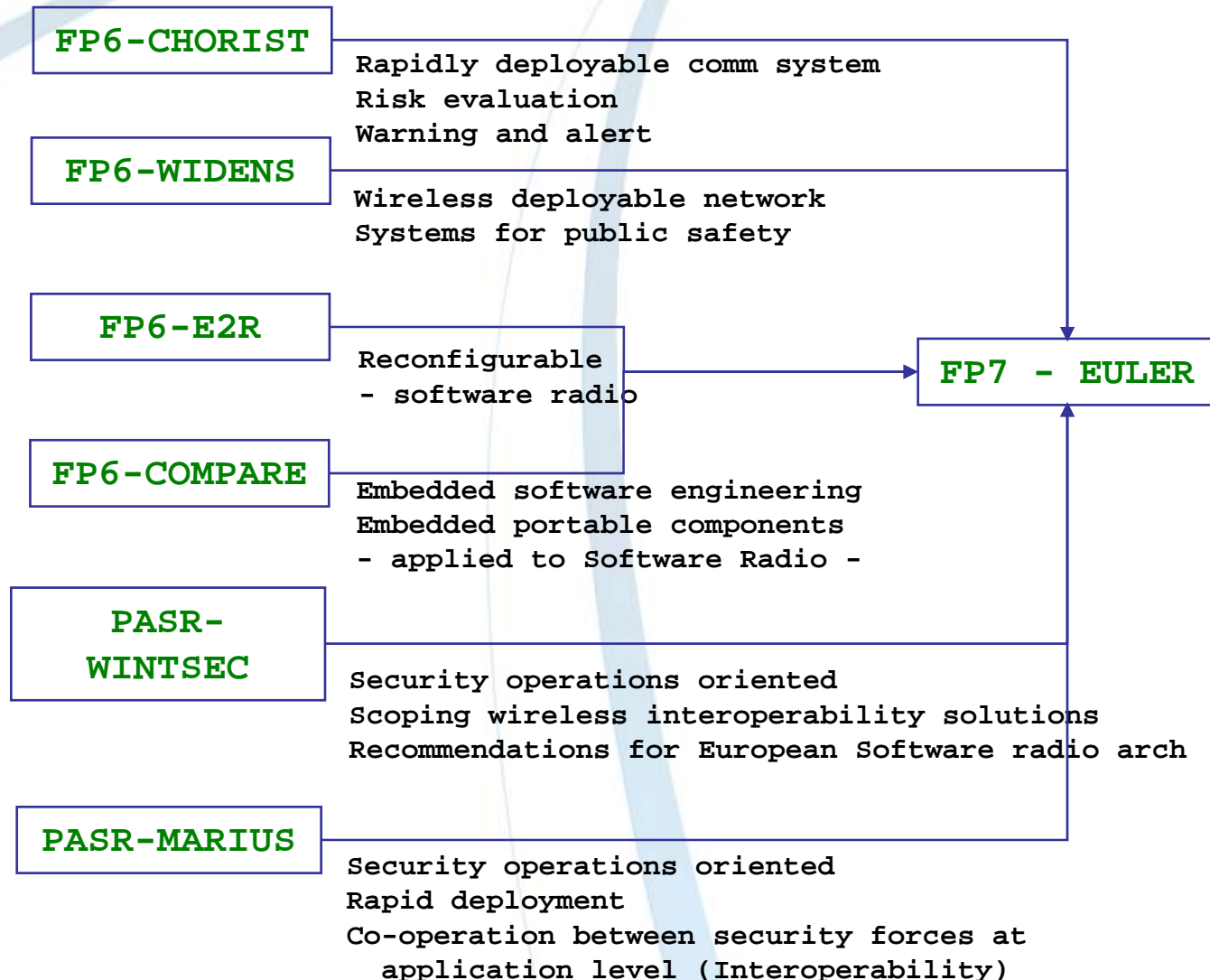
- Open SDR standard implementation (ESRA)
 - Evolution of existing standards inline with EU efforts

- Provision of High-data-rate capable SDR platforms

- Portable HDR waveform
 - Formalised waveform design methodology
 - Co-operative implementation



EULER: EC SDR projects background





Future Calls for Proposals

- Annual Security research calls as from 2008 to be opened in June
- Option for further joint and coordinated calls
- Backloading of annual budgets

Security Research Call 2 (2008)

- 3 Demonstration projects phase 1: Logistic and supply chain security; CBRNE (Chemical, Biological, Radiological, Nuclear agents and Explosives); Aftermath crisis management system
- Integration projects: Advanced forensic toolbox; Secure strategic information management system; Detection system for abnormal behaviour; Open space security; Built infrastructure protection; Sea borders surveillance system; Extended smart borders; First responder of the future

Security Research Call 3 (2009)

- 2 Demonstration projects phase 2 (phase 1 called for in Security Research Call 1)

Security Research Call 4 (2010)

- 3 Demonstration projects phase 2 (phase 1 called for in Security Research Call 2)

Security Research Calls 5 (2011) and 6 (2012):

Details not yet planned, looking for further coverage



Potential for standardisation of SDR and Cognitive Radio at ETSI

- European Commission actively involved -

- February 2007 ETSI workshop on Software Defined Radio and Cognitive Radio
- research community, from regulators, the defence community, from network operators and equipment vendors
- Highlighted: **Research & Development** of SDR + CR systems advanced and several **Standardisation** efforts *-not necessarily related-* underway
- ETSI Board decided to establish an ad-hoc group to study the **potential for standardisation**. First meeting 29 May '07, decision to prepare report
- Draft discussed at the meeting of the ad-hoc group 6 Sept. '07
- Recommendations to the ETSI Board being prepared

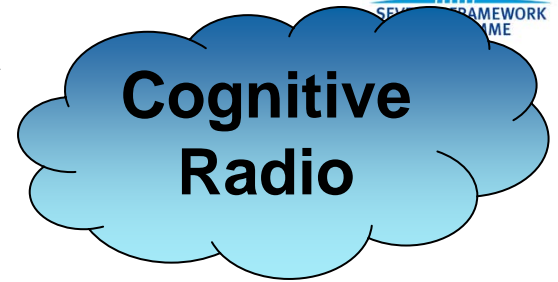


SDR: Joint Civ/Mil EDA / EC / pMS SDR Endeavour

DG InfSo
DG Enterpr
LoI CRT VI
PT SDR

WINTSEC

FP-7
SDR R&T
Activity



EDA SDR

Military Requirements

Military Information Assurance

2007

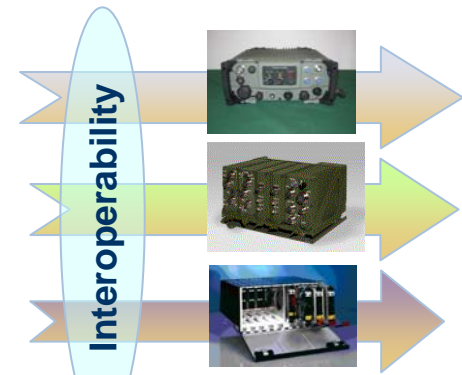
2010

• Industry

Nat. Military SDR Projects

• SDR forum

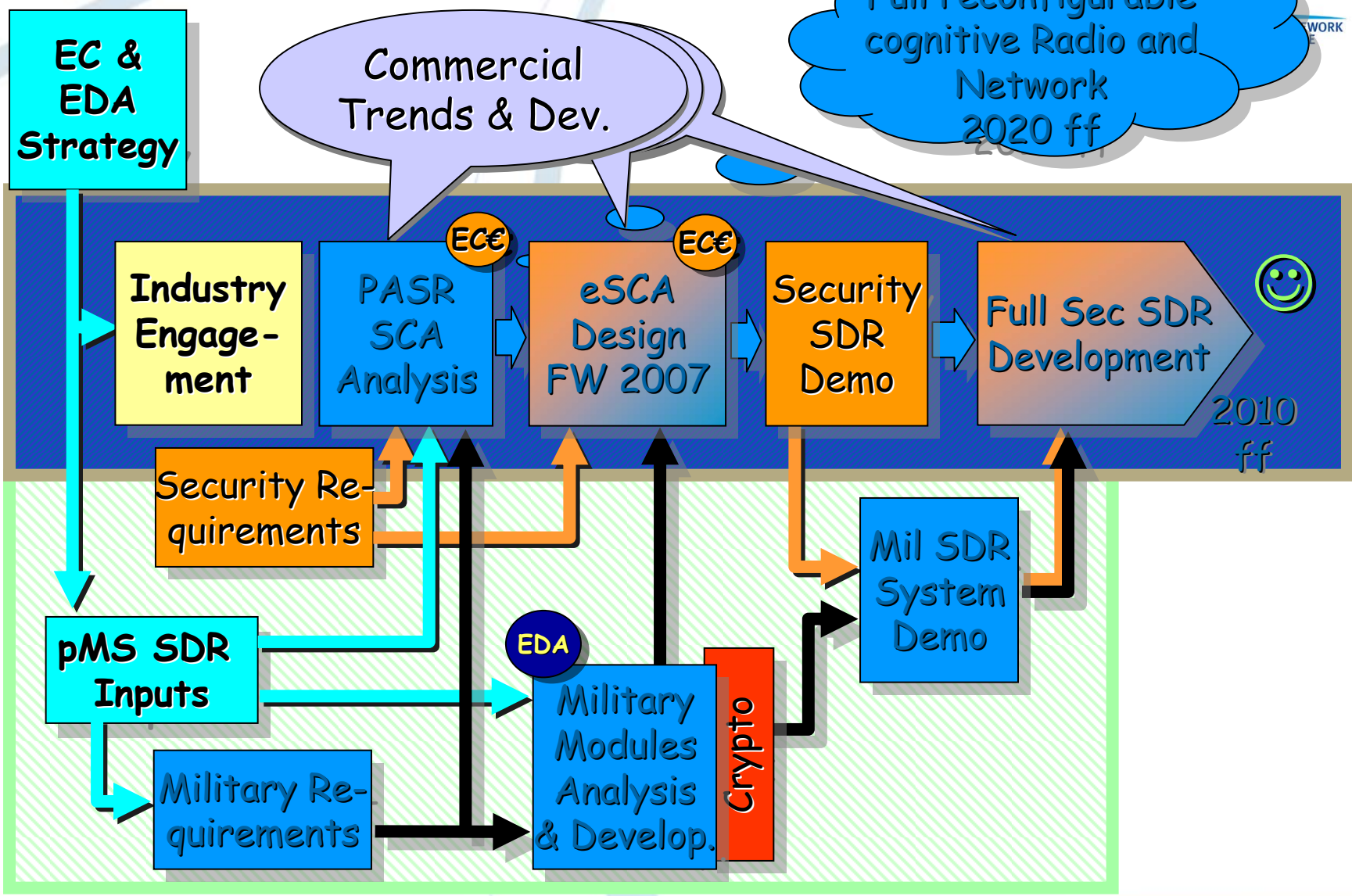
• NATO



Development of Interoperability Standards on SDR - National / Cooperation



SDR Avenue of Approach





More information

- EU Security research websites:
 - <http://ec.europa.eu/enterprise/security>
 - <http://cordis.europa.eu/security>
 - <http://cordis.europa.eu/fp7/calls/>

- Helpdesk:
 - entr-security-research@ec.europa.eu