



# Safety & Security challenges from a policy point of view

The challenge of implementation of research results

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# Outline

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Background information on ETPIS

Integration of safety & security

The Challenges of R&D results implementation

Illustration with several initiatives:

- SAF€RA: end-user driven joint research programming and joint calls involving public authorities and industry
- capacity building project P41 from CBRNe Centers of Excellence

# ETPIS profile & key figures



Buncefield, 11 Dec. 2005 (UK)

- An instrument created in 2005 to pilot and defragment EU research investment in industrial safety (OHS, process safety & environmental safety, emerging risks)
    - *Vision & Strategic Research Agenda*
    - *SafeFuture*
    - *SAF€RA PARTNERSHIP (ERANET)*
  - An open forum with 850+ experts to share ideas, prepare future work & disseminate results
    - *Focus groups, National TPIS*
    - *Technical Workshops & Conferences*
    - *Education and Training*
  - A platform driven by industry with a High Level Group with representatives from Chemical, Oil, Car, Energy, Transport, Food, Re-insurance, Construction, Manufacturing, Defense and EU-OSHA
- 11 years of operation
  - 12 projects (50 M€) **on safety issues** funded by the EC since FP7 in NMP:
    - Integrated risk management
    - Personal protective equipment
    - Organizational safety
    - ERANET
    - Ageing of infrastructures and industrial plants(nanosafety, energy, security... projects not included )
  - Cross-ETP: cooperation with a large network of other ETPs, Associations and Institutions
  - Research programming evolution: bottom-up > societal challenges > end-user driven





March 2015: 19 organisations funding research on industrial safety decided to create the SAFERA Partnership to continue operating the ERANET (<http://www.safera.industrialsafety-tp.org/>).

EPSC (industry association) and IOSH (international org.) have joined

2013: 1<sup>st</sup> joint call on “Human and organizational factors including the value of industrial safety”

- 53 applications (requesting 9.44 M€)
- 12 projects funded (3.4 M€)

2014: 2<sup>nd</sup> joint call on “Innovating in safety and safe innovations”

- 42 applications from 19 countries (requesting 8 M€)
- 9 projects funded (about 2 M€)

2016: 3<sup>rd</sup> joint call (on-going) with approx. 1.6 M€ available

- T1: Big data and intelligent prognostics for life extension of aging facilities
- T2: Developing professional competencies and learning from experience

# ETPIS as Cross-ETP initiative on Industrial Safety

- Evaluation by the European Commission in spring 2013
- ETPIS has become a Cross-ETP Initiative
  - Cross-cutting / transversal topic
  - Potential interactions with all other ETPs
  - Safety as an overarching issue
- 3 missions:
  - Strategy - Programming
  - Mobilizing - Brokering
  - Dissemination

Individual ETPs

Bio-based economy	Energy	Environment	ICT	Production and processes	Transport
EATIP	Biofuels	WssTP	ARTEMIS	ECTP	ACARE
ETPGAH	EU PV TP		EUROP	ESTEP	ERRAC
Food for Life	TPWind		ETP4HPC	EuMaT	ERTRAC
Forest-based	RHC		ENIAC	FTC	Logistics
Plants	SmartGrids		EPoSS	SusChem	Waterborne
FABRE TP	SNETP		ISI	Nanomedicine	
TP Organics	ZEP		Net!Works	ETP-SMR	
			NEM	Manufuture	
			NESSI		
			Photonics 21		
Cross ETP Initiatives					
Nanofutures					
Industrial Safety					

See [http://ec.europa.eu/research/innovation-union/index\\_en.cfm?pg=etp](http://ec.europa.eu/research/innovation-union/index_en.cfm?pg=etp)

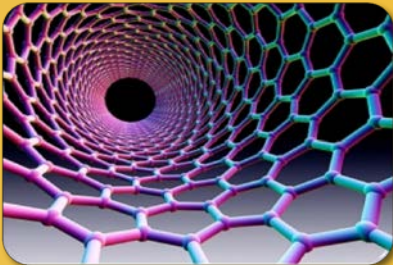
# Safety in Horizon 2020

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## Conventional risks

improving the safety performance in all industry sectors and reducing the impact of accidents taking into account technical, human, organisational and cultural aspects, and the current 'state-of-the-art methods' for safety management.



## Innovative industry

accompanying the innovative industry to reduce the time to the EU market and reach public acceptance of new technologies and products by implementing e.g. the [CEN Workshop Agreement CWA 16649:2013 'Managing emerging technology-related risks' adopted on June 26, 2013](#)



## Safety technologies, products & services

guaranteeing the leadership of the EU safety industry on personal protective equipment, safety systems, inspection and control...

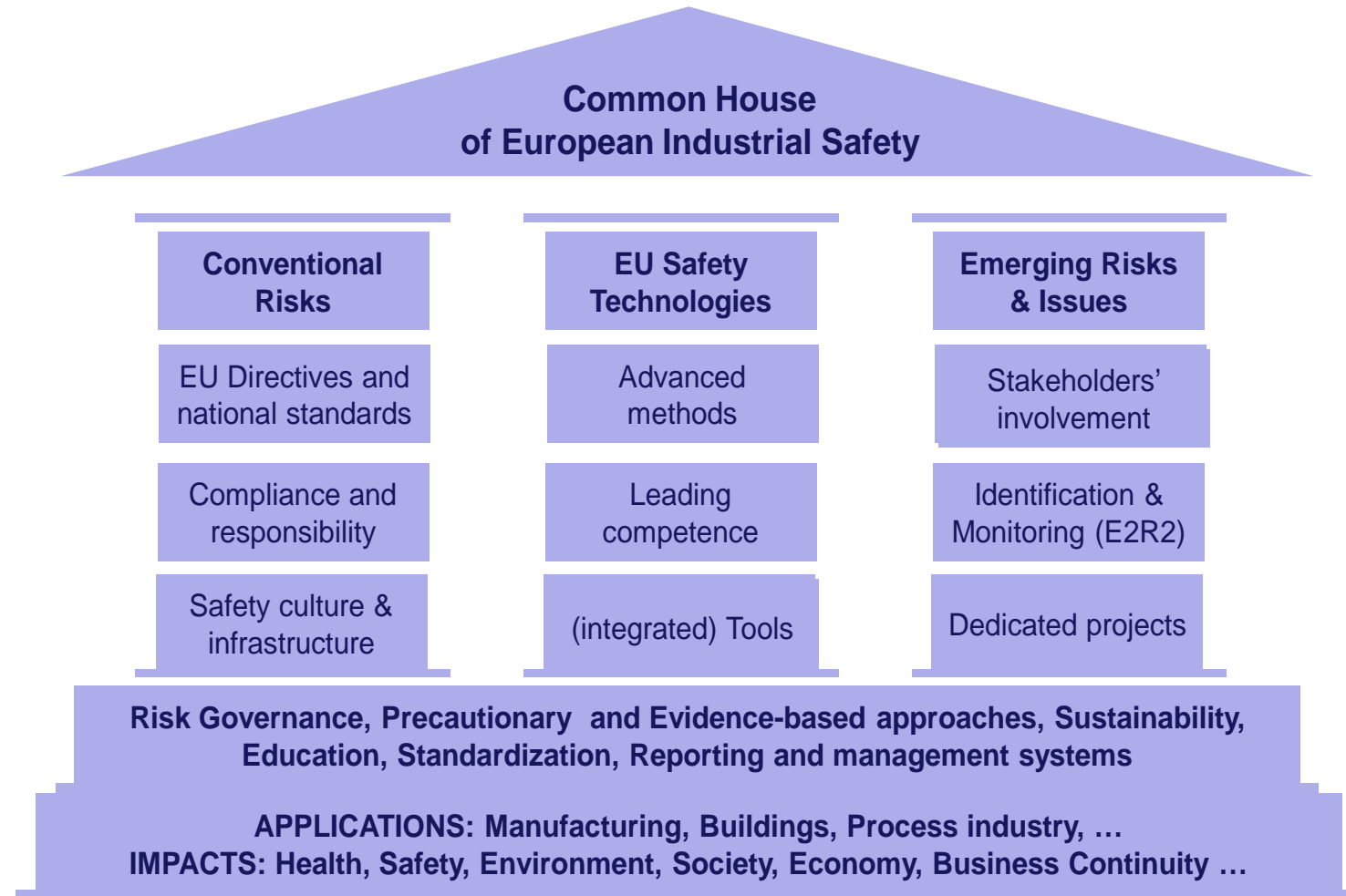
# The industrial safety “Common House”

Common House of industrial safety to address with other organizations safety / security / risk management issues

- Integration
- Sharing of good practices
- Harmonization and coherence (Better Regulation)

Key challenge: risk governance and practical emerging risk management

- Implementation of the Risk Radar and Emerging Risk Management methods



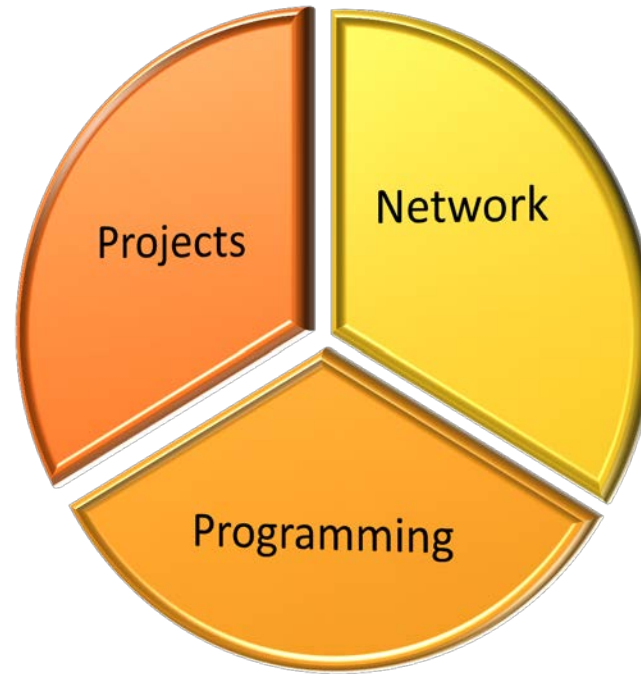
# Achievements of ETPIS

## Projects – Network – Joint Programming



12 projects funded by the EC since FP7 in NMP

- Integrated risk management
- Personal protective equipments
- Organizational safety
- ERANET
- Ageing of infrastructures and industrial plants



About 850 registered stakeholders  
80 active institutions/companies  
Partner associations (industry, scholarship, scientific, clusters...)



SRA 2006  
HLG priorities



SafeFuture (consultation of the members)  
SAF€RA Research Programming (ERA-NET)



# EC Industrial Safety WS, September 2014

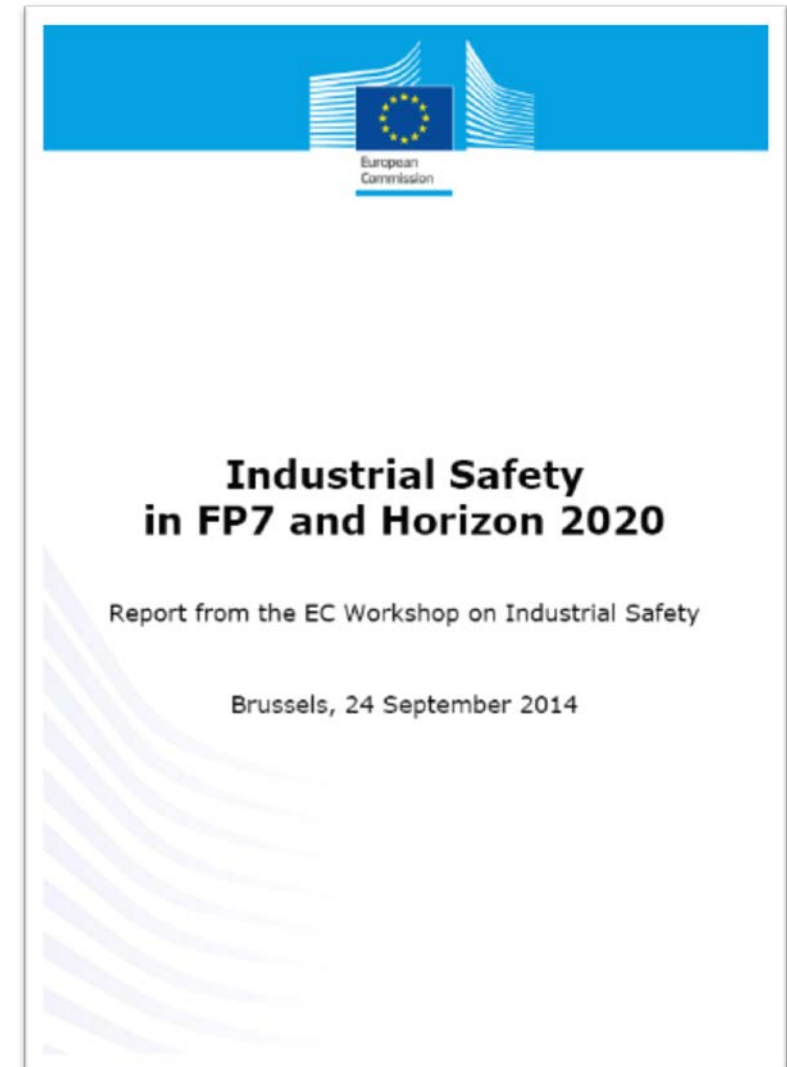
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On September 24, 2014 the European Commission, with the support of ETPIS, organised a Workshop on Industrial Safety in Brussels.

The aim was to discuss with the different industrial stakeholders the interest of taking safety into account as a cross-cutting issue in the different PPP topics, similarly to what is done with sustainability.

See:

[http://ec.europa.eu/research/industrial\\_technologies/event-14-programme\\_en.html](http://ec.europa.eu/research/industrial_technologies/event-14-programme_en.html)



# Safety & security challenges with a policy point of view

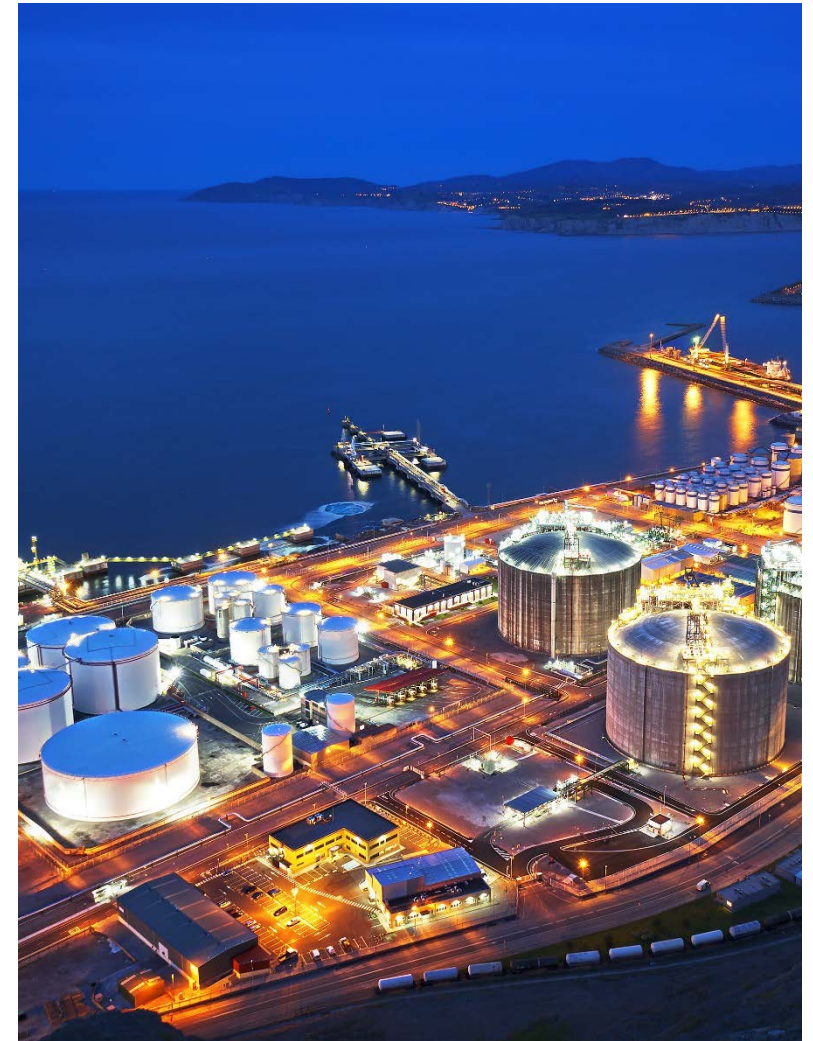
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- **Integration at policy level** to support cost-effective and coherent regulations and minimize the administrative burden in particular for SMEs
  - Integration of concepts (policies, methods, approaches) and their implementation in the industry and critical infrastructures (organizations, technologies for operation and maintenance): focus on resilience, CIP, CBRNe
- ★ ■ Consider the **socio-economical aspects** of major accidents and disasters
  - Propose again the call: DRS-15-2015: Critical Infrastructure Protection topic 4: Protecting potentially hazardous and sensitive sites/areas considering multi-sectorial dependencies
  - Introduce collection of data on socio-economic impacts of major accidents and disasters
- ★ ■ Develop **relevant and shared indicators** to improve disaster risk management
  - You cannot manage if you cannot measure! Opportunity of the directive on reporting of non-financial information
- ★ ■ Improve **implementation and speed up the sharing of good practices** for disaster risk management
  - Improve the databases on accidents, incidents and near-misses so that they are useful for the industry users ; shift from global to sector databases
  - Disseminate at national level in local language
  - Enhance the development of guidelines, reference documents and standards
- Address the **social acceptance** of new technologies for disaster risk reduction

# Propose again the call DRS-15-2015 (Horizon 2020)

**TITLE:** Critical Infrastructure Protection topic 4: Protecting potentially hazardous and sensitive sites/areas considering multi-sectorial dependencies

**CHALLENGE:** There is a need to better understand how society as a whole might be affected by risks of accidents, natural disaster or terrorist attack on sensitive sites/areas (involving potentially hazardous substances), in order to enable effective protection measures to be developed. In this respect, the breadth of impacts from Seveso type sites/areas has to be investigated, considering multi-sectoral (inter-)dependencies (notably transport, energy, communications, water). **This implies developing knowledge on multiple types of sectors and socio-economic conditions around Seveso type sites/areas that might be affected by accidents,** taking into account the type of sites/areas, CBRNE substances of concern, the vulnerability of various sectors and their dependencies/interactions and of the population, risk evaluation based on advanced decision making techniques and scenarios mimicking different levels of severity of impacts.



# Disclosure of non-financial information: building trust

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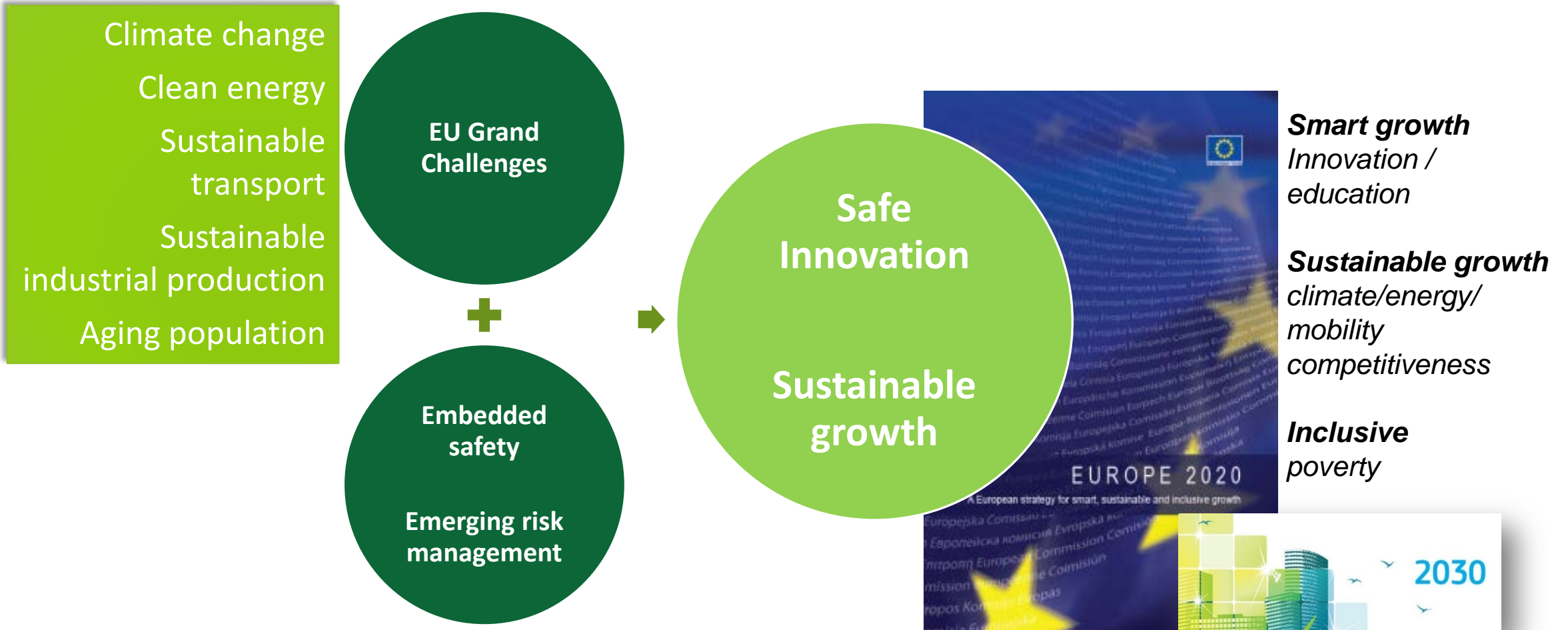
The **Directive 2014/95/EU on disclosure of non-financial and diversity information** requires that certain large undertakings and groups (more than 500 employees) share information on policies, risks and outcomes on environmental matters, social and employee-related aspects, respect for human rights, anti-corruption and bribery issues, and diversity in their board of directors.

- Scope includes approx. **6.000 large companies & groups across EU**
- **KPIs** for CSR, OHS, major accident prevention, resilience to measure the sustainability (harmonized / recognized implementation) using existing rating methods
- **Standardized reporting system** enabling (inter-)comparison.
- Support to the reindustrialization in Europe by **promoting sustainability performance** and therefore better supporting the acceptance of innovative industry.



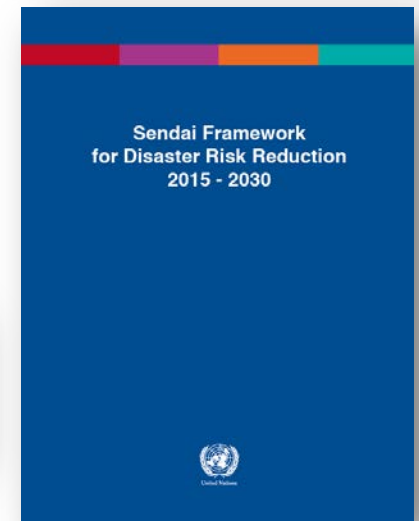


# Open innovation & sustainable growth



Embedded safety and emerging risk management for a competitive Europe

# Open innovation & sustainable growth (vers. 2016)

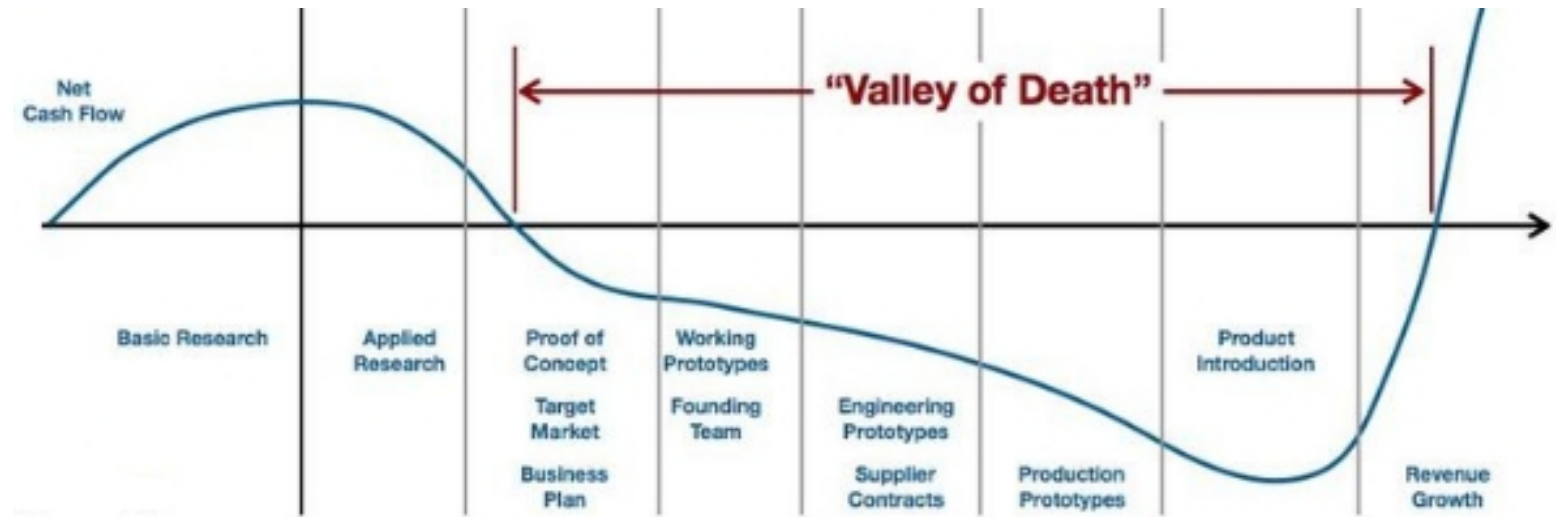


# Implementation of R&D results

## Usual delay for new knowledge to implementation

- New knowledge requires to change the habits and existing procedures... it takes time
  - Changes in the regulation
  - Changes in the practices

E.g. Seveso accident in 1976 => Seveso directive in 1982



From Strategic Alliances Resources Network, LLC (StarNet, LLC),  
<http://www.starnetllc.net/>

# Implementation of R&D results

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## **For safety & security, R&D results are inputs to make decision**

- We can observe:
  - Decision makers often react emotionally
  - There are often reactive changes of regulation and practices, after major accidents
- Risk management is about managing risks and uncertainties in a given context (safety or security), proactively,

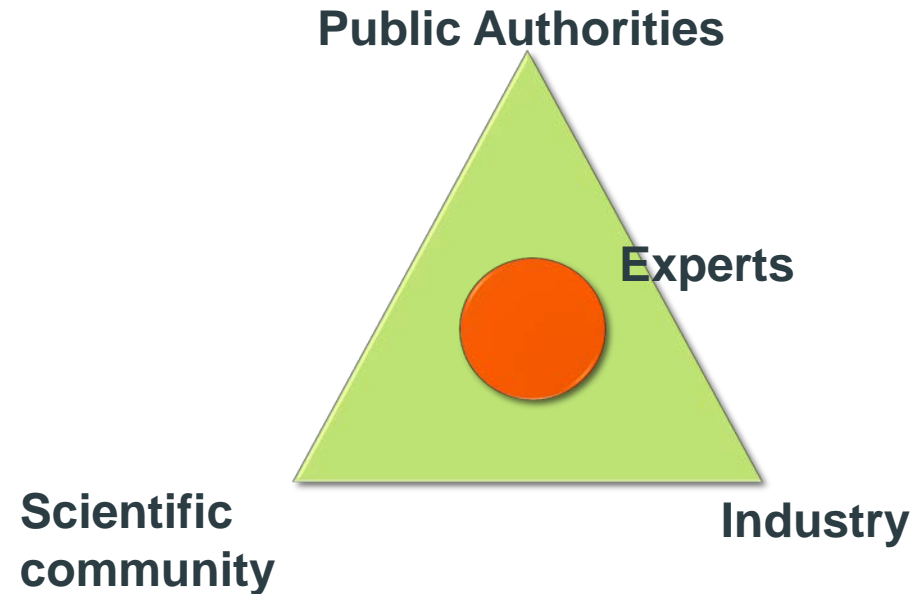
## **Several strategies to improve the implementation of R&D result**

- Involve the end-users and stakeholders (e.g. ETPIS, EU-OSHA Benchmarking Group, SAFERA, EC4SafeNano)
- Outreach standards for use by practitioners (e.g. nanoSTAIR)
- Publish guidelines and methods on the internet
- Disseminate outside the scientific community with implementation projects (e.g. CBRNe P41)



# Role of experts and expert Institutes

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- Develop knowledge in relations with the scientific community
- Provide technical support to the industry to design new technological solutions
- Help authorities to develop policies and regulations to guarantee a high level of protection for the society

## Funded projects (<http://projects.safera.eu/>)

- Value of Safety — VaLoSa
- Success in the face of uncertainty: human resilience and the accident risk bow-tie
- Predictive methods for determining the decomposition properties of hazardous substances: from development to experimental verification — HAZPRED
- SAFety Preferences for Health-related Industrial Risks — SAPHIR
- Exploring contributions of civil society to safety — ECCSSafe
- Training for Operational Resilience Capabilities — TORC
- SocioTechnical safety Assessment within Risk Regulation Regimes — STARS
- Promoting safety as an emergent property of a resilient system
- Improving resilience in waste transports
- Development and validation of a KPI-based method and a user-friendly software tool for resilience-focused measurement of OSH management system performance — KPI-OSH-Tool
- Forecasting Safety with Smart Working Environments — ForSafety
- Smart Process INdustry CranEs — SPRINCE
- Building a European platform for evaluation of consequence models dedicated to emerging risks — SAPHEDRA



**SAF€RA**

*Coordination of European Research on Industrial Safety  
towards Smart and Sustainable Growth*

This project has received funding from the European Union's Seventh Framework Programme  
for research, technological development and demonstration under Grant Agreement no. 320451



# SAF€RA in short

The initiative “SAF€RA PARTNERSHIP” enables to have on board the research programme owners and managers in the field of industrial safety

The participation of associations in the partnership (EPSC, IOSH...) is an opportunity to align the priorities from the public authorities and the industry

This gives credibility and relevance for the research programming



Funded by the European Union



CBRN  
**Centres  
of Excellence**  
*An initiative of the European Union*

EU CBRN Risk Mitigation Centres of Excellence

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# Project 41

## “High risk chemical facilities and risk mitigation in the AAF Region”

Contract IFS/2014/346176

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*Jointly implemented by European Commission and UNICRI*







# PROJECT 41 : GEOGRAPHIC SCOPE



CBRN  
**Centres  
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An initiative of the European Union

## CoE African Atlantic Facade

1. Benin,
2. Cameroon,
3. Gabon,
4. Ivory Coast,
5. Liberia,
6. Morocco,
7. Senegal,
8. Togo.





To develop capabilities and enhance sound chemical hazard management within the African Atlantic Façade Region in order to

- Prevent the occurrence of high risks chemical incident inside and around all important chemical installations.
- Develop a rapid and appropriate response in case of a chemical incident for limiting the impact on human health and on the environment.



For more information on Project 41 :  
Web site [www.cbrncoe41.eu](http://www.cbrncoe41.eu)



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Project 41



Contract IFS/2014/346176



High risk chemical facilities and risk mitigation in the African Atlantic Facade (AAF) Region

English /French

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# Conclusions

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Integration of safety & security is an opportunity to improve disaster management in the context of the 2030 Agenda for Sustainable Development and the Sendai Framework.

Several policy issues should be addressed with the commitment of end-users and practitioners (Integration, socio-economical consideration, relevant and shared indicators, social acceptance of new technologies and implementation of good practices).

Quick transfer to practitioners and implementation of research results helps to make better decision for risk management

R & D projects should pay more attention to the implementation of the results and propose a sound strategy and activities during the project

- Involvement of stakeholders & end-users during the research
- Preparation of guidelines and standards to share the results
- Disseminate in the research community but also to practitioners and professional networks

ETPIS and SAFERA promote the implementation of research results, and support researchers to reach this objective