European Reference Network for critical infrastructure protection

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The European Commission’s science and knowledge service
Joint Research Centre
The Joint Research Centre at a glance

3000 staff
Almost 75% are scientists and researchers.
Headquarters in Brussels and research facilities located in 5 Member States.
What is ERNCIP?

A JRC-facilitated network of security-related experts volunteering to address issues of pre-standardisation at EU-level towards fostering the development of innovative and competitive security solutions.

https://erncip-project.jrc.ec.europa.eu/
Support to EU policy

The work of ERNCIP directly supports EU policy:

• Project created within the European Programme for Critical Infrastructure Protection (EPCIP) aimed at improving the protection of critical infrastructure in Europe;

• Action Plan to enhance preparedness against CBRN security risks (COM(2017) 610 final) = "Encourage harmonisation through standardisation and certification for CBRN security products and systems: Continue pre-normative research activities within the framework of ERNCIP";

• Supporting research on explosives detection (Communication on the EU security agenda, April 2016).
ERNCIP core activities

1. Facilitate Thematic Groups
   - currently seven active

450+ experts from 200+ organisations in 18 Member States have participated in ERNCIP thematic groups
ERNCIP deliverables

We have three main types of deliverables from ERNCIP:

1. Recommendations for standardisation and research activities
2. Recommendations in support of EU policy
3. Guidance to infrastructure operators on protective security

Plus the ERNCIP Inventory: an online database of facilities in the EU with capabilities for testing security solutions
ERNCIP core activities

2. Develop and Operate the ERNCIP Inventory

135 experimental facilities from 24 Member States are registered in the ERNCIP Inventory
Chemical & Biological Detection
- Chemical/Biological (CB) Risks to Drinking Water
- Detection of Indoor Airborne CB agents

Weapons & Explosives Threats
- Detection of explosives and weapons at secure locations
- Protection of structures against explosive effects

Radiological & Nuclear Threats
- Radiological/Nuclear threats to critical infrastructure

Physical Security
- Extended Virtual Fencing (video and biometric technologies)

Cybersecurity
- IACS components Cybersecurity Certification Framework

Sponsors
- DG HOME B4 Innovation and Industry for Security, June 2017 to May 2019
- DG HOME D2 Terrorism and Radicalisation, April 2017 to March 2019
- DG CNECT, March 2017 to February 2018
Chemical and Biological Risks to Drinking Water

A response to deliberate chemical and/or biological contamination of drinking water.

- Real-time water quality monitoring systems;
- Proposal: **Guidance on Water Security Plan for water utility operators to complement their Water Safety Plans.**
Detection of Indoor Airborne CB agents

How to combine sensors?

Where to place sensors? How many?

Which scenarios to protect for?
Detection of Indoor Airborne CB agents - Planned Outputs

1. Guidance to security managers on establishing sensoring systems for DIM of indoor, airborne chemical and biological threats)
   - Different types of infrastructure, e.g. metro stations, high-rise buildings and airports
   - Optimal combination of sensors.

2. Report on gaps for research and standardization
   - identification of research gaps
   - identification of gaps on standardization will be identified
   - Recommendations for future steps on sensor technologies.
Detection of Explosives and Weapons in Secure Locations (DEWSL)

Recent DEWSL Outputs

- Proposals for standardisation activities for mitigating the risk of explosives and weapons attacks at secure locations with low/medium throughput, including production of EU-level guidance on screening vehicles at checkpoints
- A set of research topics to help mitigating the risk of explosives and weapons attacks at secure locations with high throughput (e.g. large sporting and entertainment events) and at public places/mass transportations locations with no secure perimeters
- A working paper on the challenges and user needs for guidelines and research mitigating the risk of explosives and weapons attacks at secure locations with high throughput (e.g. large sporting and entertainment events) and at public places/mass transportations locations with no secure perimeters
Protection of Structures against explosive effects

- Testing of blast-loaded windows
  → Revision of testing standard EN 13123 and EN 13124

- Framework of the risk assessment components for building design standards (concerning terrorist effects/blast)
  → New concept, no existing procedure
Radiological and Nuclear Threats to Critical Infrastructure

Detect radiological and nuclear threats to critical infrastructure and mitigate consequences

Topics being analysed by this network of experts in 2017-2019 are:

1) Novel Detection Technologies
2) Robotics - radiation detection with unmanned systems
3) Reachback - expert support to field teams.

with a view of capitalising on the new list-mode data format standard being developed (IEC 63047) following the pre-normative research completed by this thematic group.
Extended Virtual Fencing

Biometric/video technologies are becoming increasingly important for critical infrastructure protection.

Can technology help to identify and warn of suspicious/unusual incidents?

ERNCIP proposes to assess the use of biometric/video technologies which now provide the possibility to perform risk mitigation at a distance, enabling more effective human intervention.

Millions of people are on the move....

But
Most Access Controls were designed for a different world
The IACS (Industrial Automation & Control Systems) Compliance & Certification Framework - ICCF

Introduction to the European IACS components Cybersecurity Certification Framework (ICCF)

Feasibility study and initial recommendations for the European Commission and professional users

Paul THERON, Thales

2016

The research leading to these results has received funding from the European Union as part of the European Reference Network for Critical Infrastructure

Update due April 2018
ERNCIP Approach - Summary

What differentiates the ERNCIP approach?:

• Primarily resourced by volunteer experts
• Encouragement for collaboration with other projects (current and completed)
• Thematic Group activities managed through Commission approval of annual work programmes for each Group, setting out objectives, responsibilities and deliverables, **but run by the experts themselves**
• ERNCIP network enables access to end-user communities
• Low cost/but slower delivery
• Flexibility to respond to changing priorities.
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https://erncip-project.jrc.ec.europa.eu/
Thank you for your attention – to get in touch:

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