General information

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Targeted (sub)topics

Project idea 1

SU-BES02: Technologies to enhance border and external security
Sub-topic 5: [2020] Disruptive technologies for non-intrusive identification of hidden goods
Detecting and identifying illegal goods hidden in containers, train cars and truck structures at EU external borders

Project idea 2

SU-DRS02: Technologies for first responders
Sub-topic 3: [2020] (up to TRL 6-7) Methods and guidelines for pre-hospital life support and triage
Development of innovative tools, methodologies and European pre-hospital guidelines for first responders of medical services, fire services and police

Project idea 3

European Defense Industrial Development Programme (EDIDP) *: specialised sensors for detection and early warning of potential CBRN threats*

Project idea 4

SU-DRS04-2019-2020: Chemical, biological, radiological and nuclear (CBRN)

Specific Challenge: Technologies and innovations in the field of CBRN are developed by companies which often face difficulties in bringing them to markets.

Competencies

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- *Organisation competencies*

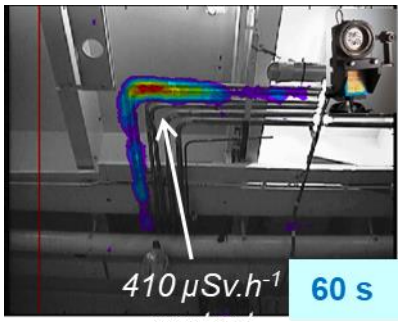
Nuclear detection, from portal to handheld system, passive and active technics

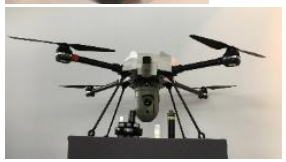
- *Organisation experience in the European project*
- ***European success : 8 proposal for 6 success, the last one is TERRIFFIC (first responder support)***

2004-2019: Research Project coordinator for successively 5 European projects: Euritrack, Eritr@C, Uncoss, Scintilla, C-BORD

- **Neutron Tag technique applied on containers to detect explosives**
- **Nuclear sensor development for security, neutron detector Helium 3 replacement, Radioactive Portal Monitor RPMs developments**
- **Equipment for customs Non-Intrusive Inspection**

- *The skills you can bring*
- ***Gamma, neutron, Compton and Spectrum identification with "Nuclear camera" handled or embedded (weight 0,35 kg) on air and ground vehicle (UAV and UGV)***
- ***Radiological identification, Alpha, Beta, Neutron, Special Nuclear Material (SNM)***
- ***Low consumption sensor***





• SU-BES02: TECHNOLOGIES TO ENHANCE BORDER AND EXTERNAL SECURITY

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Project idea 1

RIA, dead-line: 27 August 2020, expected technos up to TRL 5 to 6, budget : 7M€

Sub-topic 5: [2020] Disruptive technologies for non-intrusive identification of hidden goods
Detecting and identifying illegal goods hidden in containers, train cars and truck structures at EU external borders is a need shared by border guard, customs and law enforcement authorities. **Illegal goods, including drugs, weapons, explosives, radiological and nuclear material**, are trafficked into Europe by criminal organisations using a range of methods and tools, which are very diverse and adaptable to specific border conditions. Research should focus on the use of **improved sensing technologies**. The system of sensors producing a highly detailed, user friendly, 3-dimensional insight into the internal structure of a container (or truck), and the type of cargo carried, in a limited amount of time, would in particular be a valuable disruptive innovation More accurate localisation and identification of illicit cargo, without the need to open containers).
Proposals should **conduct testing and validation** in the relevant environment.

Sub-topic: Open
Proposals addressing other issues relevant to this challenge, based on a sound rationale and supported by a large number of relevant practitioners are invited to apply under this sub-topic.

- *SU-BES02: Technologies to enhance border and external security*

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Project idea 1

SU-BES02: Technologies to enhance border and external security
Sub-topic 5: [2020] Disruptive technologies for non-intrusive identification of hidden goods
Detecting and identifying illegal goods hidden in containers, train cars and truck structures at EU external borders

- *Describe your project idea*
  - **30 km/h gamma portal tracking system with reduce footprint area.**
  - **Imagery Gamma, Compton and Neutron (second line)**
  - **Detection system Embedded on articulated lorry**
  - **Alternative to ANSI proposal for standard apply to Am241 detection**
  - **Data transmission process, low consumption, low weight for handled tools**
- *List of the complementary skills you need for your consortium*
  - **Minimum of 3 practitioners (One is identified)**

• SU-DRS02: TECHNOLOGIES FOR FIRST RESPONDERS

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Project idea 2

RIA, dead-line: 27/08/2020, budget: 7M€

Sub-topic 3: [2020] (up to TRL 6-7) Methods and guidelines for pre-hospital life support and triage Development of innovative tools, methodologies and European pre-hospital guidelines for first responders of medical services, fire services and **police** and hospital trauma teams in order to ensure faster and more effective evaluation and control of numerous seriously injured casualties in disaster and/or emergency situations. This should take account of lessons learned from military mass-casualty techniques such as damage-control surgery. The aim is to ensure more effective pre-hospital triage of victims with appropriate digital traceability of actions and data transfer from the event to the hospital(s), including across administrative and political boundaries.

Sub-topic: [2018-2019-2020] Open (TRL 4-6)

- *SU-DRS02: Technologies for first responders*

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Project idea 2

SU-DRS02: Technologies for first responders
Sub-topic 3: [2020] (up to TRL 6-7) Methods and guidelines for pre-hospital life support and triage
Development of innovative tools, methodologies and European pre-hospital guidelines for first responders of medical services, fire services and police

- *Describe your project idea*
  - **New generation of personal dose sensor for first responder, gamma, neutron.**
  - **Sensors autonomy and low weight**
  - **Beta Gamma sensors for Contamination, detector (portal and handheld) dedicated to exclusion zone, ability to work whatever background fluctuation. Allow to work closer to exclusion area.**
  - **Biologic Ebola automatic reading system and data transmission to headquarter.**
  - **Data transmission and victims trigged support.**

- *List of the complementary skills you need for your consortium*

• EUROPEAN DEFENSE INDUSTRIAL DEVELOPMENT PROGRAMME (EDIDP)

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Project idea 3

Chemical Biological Radiological Nuclear (CBRN) detection capabilities and medical countermeasures (call for proposals – 2020)

The resilience of Union and its preparedness to deal with CBRN threats needs to be enhanced, and there are significant cooperation opportunities on **CBRN reconnaissance, decontamination, individual and collective protection**, as well as on training. A comprehensive set of CBRN capabilities must be capable of providing CBRN scientific and operational assessment and **advice to commanders** and their staffs during the planning and conduct of operations.

The CDP analysis indicates the relevance of deploying dedicated Intelligence, Surveillance, Target Acquisition and Reconnaissance (ISTAR), exploitation and processing capabilities and specialised sensors for detection and early warning of potential CBRN threats to friendly populations and defence forces. Early detection of CBRN threats can be supported by intelligence operations performed through web data mining in dark nets and deep web.

Proposals are invited against one of the following topics:

☐ Capabilities for CBRN risk assessment, detection, early warning and surveillance;
☐ CBRN medical countermeasures, such as preventive and therapeutic immunotherapy;
☐ Treatments for CBRN related injuries.

Targeted type of activities4: design or system prototyping, not excluding upstream or downstream activities.

The indicative budget for this category is **EUR 13 500 000**.

Several actions, addressing different topics, may be funded under this category.

- *European Defense Industrial Development Programme (EDIDP)*

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Project idea 3

European Defense Industrial Development Programme (EDIDP) *: specialised sensors for detection and early warning of potential CBRN threats,*

- *Describe your project idea*
  - **Detector Beta contamination**

- *List of the complementary skills you need for your consortium*
  - **Minimum of 3 practitioners (One is identified)**

SU-DRS04-2019-2020: CHEMICAL, BIOLOGICAL, RADIOLOGICAL AND NUCLEAR (CBRN) CLUSTER

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Project idea 4

Specific Challenge: Technologies and **innovations in the field of CBRN are developed by companies which often face difficulties in bringing them to markets**. At least three reasons may be identified:

- they address local, small niche markets;
- these companies have neither the capabilities nor the strategic objective to go for foreign markets;
- the individual technologies that they develop can make it to the market only if integrated and combined with other tools by other companies that have the capabilities and the strategy to market products abroad, and possibly on the global market.

In this context a platform has been established further to the response to topic SEC-05-DRS- 2016-2017 in 2017. A larger number of innovative technologies, devices and services need to be added to this platform.

Scope: In 2019 and 2020 the Commission will select several RIAs aiming at research and development of novel CBRN technologies and **innovations identified in the catalogue that is updated by the ENCIRCLE** project on a regular basis. Each of these **actions will be led by an SME**. **Each consortium implementing such a RIA must** not only establish a consortium agreement among its members, but also **an agreement with the participants in the ENCIRCLE project** which must settle how the results from the RIA will be exploited and integrated into platforms managed by ENCIRCLE.
Where applicable, the complementarity of the proposed activities with activities **supported by the European Defence Agency (EDA)** should be described comprehensively.
The centre of gravity for technology development with actions funded under this topic is **expected to be up to TRL 4 to 6** – see General Annex G of the Horizon 2020 Work Programme.
Indicative budget: The Commission considers that proposals requesting a contribution from the EU **of about EUR 3.5 million per action** for this topic to be addressed appropriately. Nonetheless this does not preclude submission and selection of proposals requesting other amounts.
The following options of the Model Grant Agreement will be implemented:

- Option 1 of Article 41.3 of the Model Grant Agreement will be applied.

- *SU-DRS04-2019-2020: Chemical, biological, radiological and nuclear (CBRN) cluster19*

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Project idea 4

SU-DRS04-2019-2020: Chemical, biological, radiological and nuclear (CBRN) cluster
Technologies and innovations in the field of CBRN are developed by companies which often face difficulties in bringing them to markets.

- *Describe your project idea*

- *List of the complementary skills you need for your consortium*
  - **SME Coordination**
  - **Agreement with ENCIRCLE and supported by the European Defense Agency (EDA)**