

Project RESIST
REsilience Support for critical
Infrastructure's through
Strandardised Training on CBRN



Project Overview

OBJECTIVE:

Improvement of the preparedness and fast response of operators and emergency responders in case of a CBRN event which affects a Critical Infrastructure (CI).

RESIST will engage CI operators in the design, realization and testing of a standardized training curriculum for the management of CBRN events. RESIST will, in fact, provide a standardized framework, which will allow to:

- Set-up a pool of properly trained and equipped employees;
- Set-up procedures to guide their intervention in case of a CBRN event.

RESIST will engage directly the operators from ten large EU CI/public spaces, creating the first ten CBRNe intervention groups already within project lifetime.



Consortium



SAFE
Security and Freedom
for Europe



Iai Istituto Affari
Internazionali

ENEA

ENTE PER LE NUOVE TECNOLOGIE,
L'ENERGIA E L'AMBIENTE



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Romanian Cluster
PROECO-CBRNE

Pilot CIs

Sector	Category	Italy	Romania
Railway Transport	ECI and public space	Roma Termini Railway Station (RFI and Trenitalia Spa) – Confirmed	East Train Station from Bucharest (Gara de Est) – Confirmed
Air Transport	ECI and public space	Il Caravaggio Orio al Serio Airport (International Airport) – Confirmed (replaced Valerio Catullo Airport)	Bucarest-Henri Coandă Airport (International Airport) – Confirmed
Energy (Multi-Sector)	ECI	Energy facilities operating within the Ravenna Harbour – Confirmed	Missing/Delayed confirmation because of Covid-19 Pandemic
Health Facility	Critical Infrastructure	National Institute for Infectious Diseases “Lazzaro Spallanzani” IRCCS – Confirmed	Military Hospital Dr. Carol Davila (TBC) /Hospital of Romanian Services for Information (SRI) – Confirmed
Nuclear Industry	Critical Infrastructure	Casaccia Research Center, managed by ENEA – Confirmed	The Extreme Light Nuclear Infrastructure Physics (ELI-NP) – Confirmed

Specific Objectives

· SPECIFIC OBJECTIVES ·

1

Agree on an updated operational categorization of CBRNe events, functional for the definition of training modules



→ WP2 →
ASSESSMENT of CBRNe events, related impact, response needs, training needs and equipment needs assessment

2

Agree on a standardised training curricula and equipment intervention package for critical infrastructures' operators and incident commanders



→ WP3 →
PREPARATION OF CURRICULA AND INTERVENTION KIT
Agreement on priority training modules, equipment definition and distribution

3

Transfer CBRNe competences to operators of 10 pilot public and private critical infrastructures for effective response and interaction with first responders in case of CBRNe events



→ WP4 →
PILOT JOINT TRAINING PROGRAMME
targeting involved critical infrastructures (rail transport, airport, energy, nuclear facility and hospitals)

→ WP5 →
REAL LIFE EXERCISES
simulation of CBRNe events scenarios in all involved critical infrastructures



4

Propose the EU wide recognition of a "CBRNe Label" certification to CEN, CENELEC and EU relevant institutions



→ WP6 →
PROPOSAL FOR EU CBRN RESILIENCE LABEL
Drafting and presentation of a Programmatic Document proposing the creation of an European standardised CBRNe Resilience Label

Communication

Communication Objectives	Description	Target groups	Instruments
<p><u>Raise awareness</u></p> 	<p>Raise awareness about CBRN risk mitigation procedures/training in case of a CBRN event at a Critical Infrastructure and about RESIST project itself.</p>	<ul style="list-style-type: none"> Operators, Security Commanders and Security Managers of pilot CIs and of other EU CIs Stakeholders (i.e. security/CBRN/CI communities) General Public (i.e. EU civil society) 	<ul style="list-style-type: none"> Technical Workshops and Real-Life Exercises Posting relevant information/material through RESIST and project partners Twitter accounts – personal and institutional – and through their personal/institutional LinkedIn accounts as well as through RESIST website.
<p><u>Increase Knowledge</u></p> 	<p>Increase knowledge about RESIST pilot project, the opportunities it has to offer at EU level – such as the CBRN resilience label – and its importance with regard to increased CBRN preparedness and response at Critical Infrastructures in terms of safeguarding the common good and the economic interests of EU Member States.</p>	<ul style="list-style-type: none"> Operators, Security Commanders and Security Managers of pilot CIs and non Stakeholders General Public EU institutions 	<ul style="list-style-type: none"> Kick off meeting, networking and closure events. Publication of photos and information about project activities on the RESIST project and partners' websites and Twitter accounts, as well as on project partners' personal/institutional LinkedIn accounts. Exploitation of partners' networks and other relevant networks at EU and national level (such as ENCIRCLE, the Italian CLUSTER P3 and PROECO).

Work Packages

WP	Title
Work Package 1	Management and Communication
Work Package 2	Categorization of CBRNe Events and Assessment
Work Package 3	Preparation of Training Curricula and Intervention Kit
Work Package 4	Pilot Joint Training Programme
Work Package 5	Real Life Exercises
Work Package 6	Proposal for CBRNe Resilience Label

Critical Infrastructures - definitions

Critical infrastructure:

Physical and information technology facilities, networks, services and assets that, if disrupted or destroyed, would have a serious impact on the health, safety, security or economic well-being of citizens or the effective functioning of governments in EU States.

(Communication from the Commission to the Council and the European Parliament - Critical Infrastructure Protection in the fight against terrorism / COM/2004/0702 final */)*

European Critical Infrastructure or 'ECI':

Critical infrastructure located in EU States, the disruption or destruction of which would have a significant impact on at least two EU States.

(Green Paper on a European Programme for Critical Infrastructure Protection, COM(2005)576 Final)

Public space:

Open nature and public character.

(Action Plan to support the protection of public spaces, COM(2017)612)

CIs involvement in RESIST Project

Operators and Incident Commanders from 10 pilot CIs (5 in Italy and 5 in Romania) will receive cost-free CBRNe training (provided by the NBC school of Rieti) and basic equipment.

To guarantee the correct use of the equipment and the effective maintenance of the facility, a real-life exercise will be carried out within scenarios simulating the Critical Infrastructures identified by the RESIST project.

WP2 Categorization of CBRN events and Assessment

Aim of WP2:

- Aim of this WP has been to agree on an updated **categorization of CBRNe events** and on a **set of events and feasible scenarios functional for the performance of training activities targeting CI operators** under this pilot project.



Expected Outputs

- **List and Categorization of CBRNe cases** labelled by color: green, yellow, red (**IAI**)
- Training Needs Assessment (TNA): identification of the common and sector specific CBRN training needs for CI operators (**UNITOV**)
- Equipment Needs Assessment (ENA): identification of equipment and intervention kits for CI operators (**external expert - IAI**)
- Validation Workshop (**IAI/SAFE**)

List of CBRN
cases by
green,
yellow or red
label

Objective:

- Providing an **updated categorization of CBRNe cases/scenarios**, to define when the intervention of CI operators is safe and of support to the emergency response from law enforcement authorities.



Methodology:

- List of scenarios have been provided and agreed by the partners; categorization of scenarios based on the **impact on the critical infrastructure and the ability of the CI to guarantee the business continuity.**

Categorization
of events
/scenarios
according to
the three
labels:



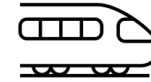
Green - can be addressed by the operators of CI **autonomously**, without recurring to external interventions by security authorities or external first responders.



Yellow - can be addressed by the CI with the support relevant security authorities and/or first responders



Red - cannot be addressed by the CI and its operators, and they have to be handled by security authorities or external first responders



CBRN conventional scenarios

	GREEN	YELLOW	RED
Chemical	Loss of containment of a limited amount (<5kg) of HazMat	Loss of containment of an average amount (>5kg & < 50kg) of HazMat	Loss of containment of a large amount (>50kg) of HazMat
Biological	Plant Species potentially carrier of exotic biological contaminants	Finding of Biological material not reported	Evidence of infected people beyond the structure management capabilities
Radiological and Nuclear	Radiologic Alarms Activation as consequence of not reported minor radioactive source (to be quantified) included in instrumentation in transit	Radiologic Alarms Activation as consequence of not reported small radioactive source (to be quantified)	Loss of Containment of Active radio nuclides as effect of transport accident



Training Need Assessment (TNA)

Objective:

- Assessment/confirmation of the common and sector specific training needs for operators of Critical Infrastructures (CI) involved in project RESIST.

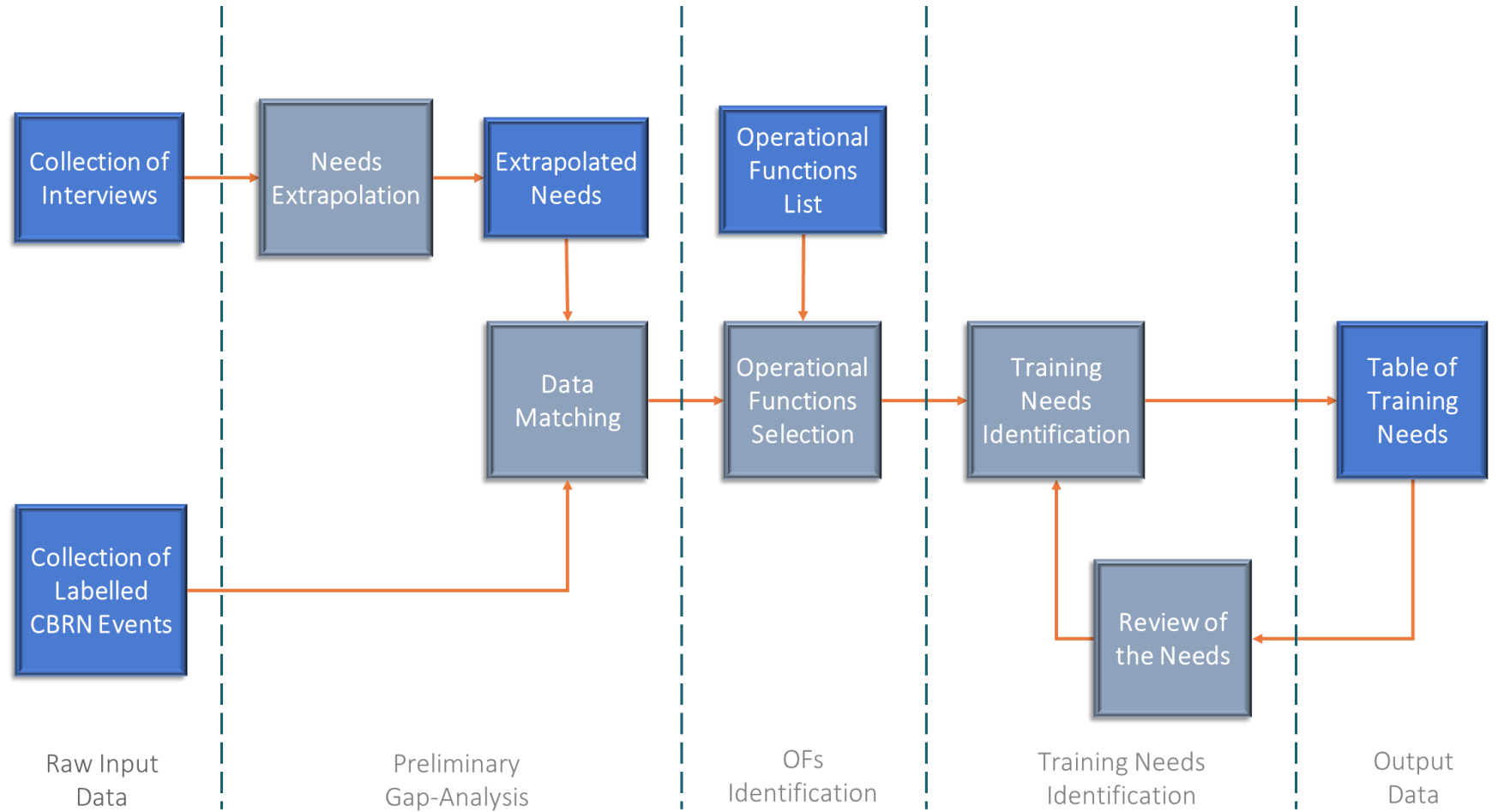


Methodology:

- 1) Desk research on available data from past/current projects;
- 2) Audience identification to produce a list of CI sectors;
- 3) Diffusion of questionnaires to collect first-hand information on sector specificities;
- 4) Structured interviews and individual discussions to complement information collected;
- 5) Focus groups (national and/or international) to assess and verify the collected CBRN training needs.



TNA Workflow



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Structured interviews and discussions: example

Summary of the needs extrapolated by Health Facilities interviews.

HEALTH FACILITIES EXPRESSED NEEDS	
GENERIC	DISCUSSION
CBRN Familiarity	Basic familiarity with CBRN terms; different interpretations of a CBRN accident.
SPECIFIC	DISCUSSION
CBRN Real Experience	No real CBRN experience; training modules exercises are usually carried out, therefore a basic level of training is present.
TRAINING	DISCUSSION
Is CBRN training needed?	Yes. Basic CBRN training is not enough and is not homogenous: focused on B aspects mainly, with some specific training based on the role of the personnel (PPE, Decontamination and Management of a CBRN accident in collaboration with FR).
Training Focus	CBRN incident approach, CBRN awareness, CBRN terminology, Communication and Collaboration Improvements with FR/authorities, Personal Protection
Most useful Training Scenario	LoC of a Biological Agent (Pathogen) or Chemical Agent, and management of an event with mixed risks.
Preferences	E-learning followed by Classical approach (acting also as E-learning assessment); 2-5 days of training time; personnel is more involved in practical exercise; mixed preference toward English language, while others Local language.
Training Level	Mixed target audience (researchers, medical staff, technicians) but in general all personnel possess at least a University Degree. Therefore, training should be of high level in order to recognise the events and have a rough knowledge of them.





CBRN scenarios requiring training that were missed during the interviews.

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Preliminary Gaps Analysis: example

HEALTH FACILITIES	
EVENTS	DISCUSSION
LoC (< 5 kg) - GREEN 	Add knowledge about the autonomous management of LoC of small quantities of flammable fuel/liquid and medical gases.
LoC (> 5 kg & < 50 kg) - YELLOW 	Add basic knowledge about the management of LoC of average quantities of flammable fuel/liquid with the support of external security authorities or external first responders.
RRA - GREEN 	Capability of recognition and management of RRA triggered from instruments or small RN source included in vintage instruments.
RRA - YELLOW 	Capability of recognition and management of RRA triggered from a small not reported RN source with the support of external security authorities or external first responders.

RED scenarios: general training regarding improved CBRN awareness, capability of recognition of dangerous CBRN events, and improved communication with external authorities and first responders.



Training Needs Identification

Intermediate results (divided per CI sector):

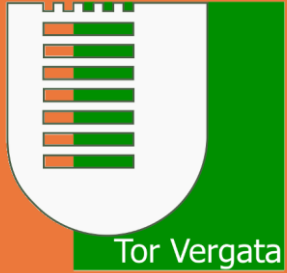
- Output of the preliminary gap-analysis (possible scenarios missed during the interviews)
- Reviewed expressed needs (extrapolated from the interviews)



Operational Functions Selection:

- OFs describe tasks and activities which must be performed by operators prior and during CBRN events and scenarios;
- They allows to assess training needs following a standard and task driven approach;
- Identified training needs become more easily comparable between different sectors;
- Still possible to add new/custom operational functions to fill the gaps and specify the training.

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Tranining Needs Table

Land Transport	Air Transport	Maritime Transport	Health Facilities	Energy Facilities	Nuclear Facilities
	Specific 3				
Specific 2	Specific 2	Specific 2		Specific 2	Specific 2
Improved communication with the public			Specific 1	Specific 1	Specific 1
Improved Communication with external authorities and first responders					
CBRN History (Optional) to increase recognition capability					
Basic CBRN awareness (types of agents, effects, interaction between risks)					
CBRN terminology					

Equipment's Needs Assessment (ENA)

Objective:

- Equipment's Needs Assessment (ENA): careful assessment to define basic equipment needs of CIs operators in terms of PPE and Ancillaries Components .



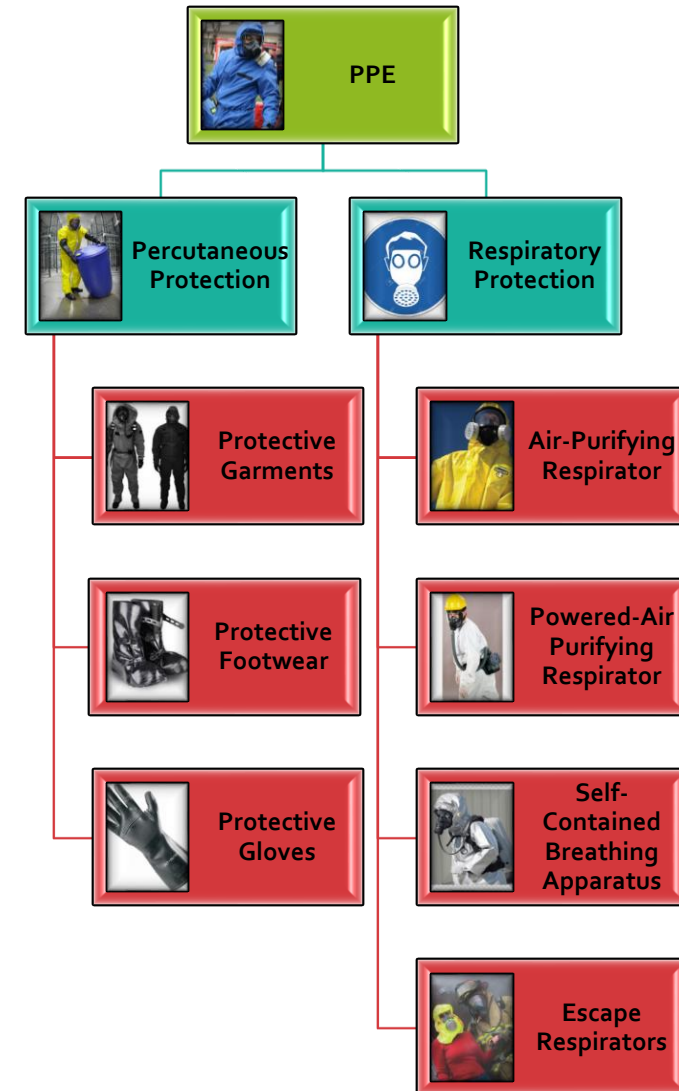
Methodology:

- The assessment was carried out on the basis of the data available in the **dedicated literature** and **market surveys**.
- The collection of these data allowed the **construction of matrices containing specific "Selection Factors"** to which **scores were attributed in terms of performance** related to:
 - **Capabilities** (ex: CWA protection, BWA protection etc.);
 - **Human factors** (ex: weight, mobility etc.)
 - **Logistics and training** (ex: single/multiple use, training requirement)
 - **Special requirements** (ex: communication interface capability etc)

PPE Needs Assessment

In general, a PPE Needs Assessment is an evaluation that provides a perspective of what PPE the CIs require, and what role they will assume during a CBRNe/HAZMAT scenario response.

PPE is divided into two major groups: respiratory protective devices and body surface protective equipment. Both groups have relatively complex additional internal division.



Ancillaries Component

Personal decontamination Kits (PDKITs):






- Can be used by emergency responders that are first on the scene and are unaware of a hazardous substance release. In **the event that responders become contaminated prior to donning adequate personal protective equipment.**

Quick Detection Kit:

- **CBRNe detection devices have capabilities that allow for identification and communication of CBRN threats,** as well as the capacity to recognize potential CBRNe threats through equipment, education, and effective protocols. Currently some detection kits devices are available capable to detect in a quickly time CBRNe or TIC/TIM agents.

ENA Assessment Result Ancillaries Items

Ancillaries
Items:
example

	Brand/ Model	Threats	
		C	B
	CBRN International		X
	Detection Strips	X	
	CHAMELEON®	X	
	Dräger X-am® 5000 Personal Monitor	X	
	Dräger Bio-Agent Test		X

WP2 Validation Workshop

Where: IAI, Istituto Affari Internazionali, Via A. Brunetti 9

When: February 5, 2020

Discussion and validation of the findings of the studies conducted within **Work Package 2** on Categorization of CBRNe events and Assessment.

Three sessions:

- Presentation of the **list and categorization of CBRNe events**
- Presentation and discussion of the report on **Training Needs Assessment (TNA)**
- Presentation and discussion of the report on **Equipment Needs Assessment (ENA)**

WP3 Training Material and Operational Guidelines

Aim of WP3:

- Prepare a **Standardized Training Programme (STP)** on CBRN defence dedicated to the identified CI sectors (i.e. Health, Energy, Nuclear, Rail Transport, Air Transport).
- Perform the **purchase and distribution of the foreseen equipment (intervention kits)** for operators of the CIs which will participate as pilot to CBRN training programme.

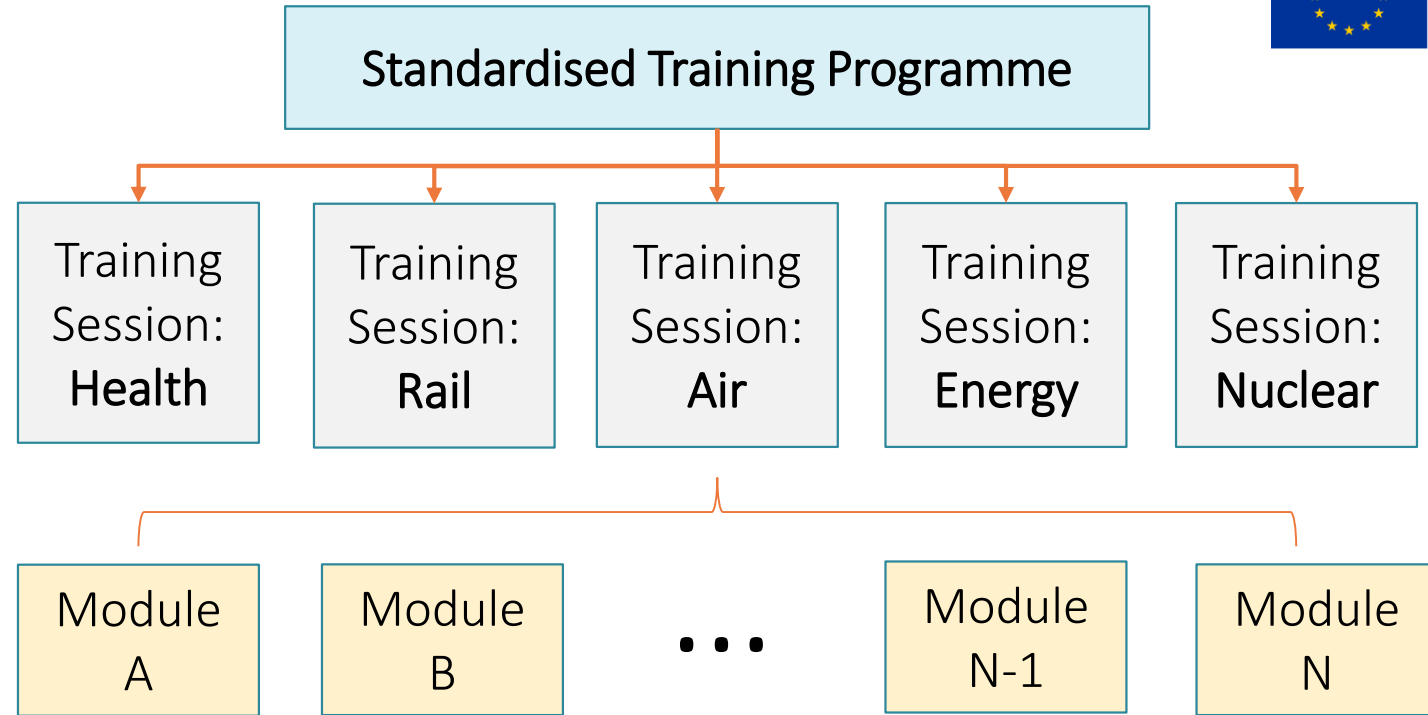


Expected Outputs

- Definition and list of **available/customized Training Modules** building on the courses/material already offered by **UNITOV, SCNBC, and PROECO Members/Romanian First Responders (UNITOV)**
- Definition and list of the **Operational Guidelines** for CI Operators in order to allow CI Intervention Groups to **effectively and quickly intervene in CBRN events without overlapping and ensuring high coordination** with external/relevant authorities (**external expert – UNITOV**)
- Update on the purchase and distribution of the intervention kits (**SAFE**)



Training Material



- Modules can be common to all sectors (**Horizontal**) or **Specific**;
- Topics of each Module will offer training for **Joint CI Operators (L1)**, **Joint CI Team Leader (L2)** or both.
- Language of the courses will be **English**.
- Each Training Session will be **5 working days** long (or **36 didactic periods**) allocated between **theoretical** and **practical** experiences.

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Methodology

Inventory of the available training material

offered by the UNITOV, the Joint NBC Defence School (SCNBC), and PROECO.



Selection of the appropriate training material

based on the results of
WP2 (CBRN events, TNA, ENA, Validation Workshop) and the proposed
training objectives.



Customization of the identified training material

based on the specific context of civilians CI operators

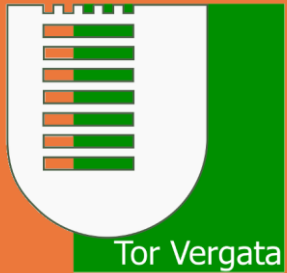


Temporary List of Training Modules

NON BINDING TRAINING SESSION TIMELINE MODEL

Didactic Block	Day 1	Day 2	Day 3	Day 4	Day 5
Morning	Module 5.1 <i>“Introduction to CBRN risks and general aspects related to the CIs protection and resilience”</i>	Module 5.3 <i>“Chemical Hazards and CIs”</i>	Module 5.5 <i>“Radiological and Nuclear Hazards and CIs”</i>	Module 5.7 <i>“Communication and Psychology”</i>	Module 5.9 <i>“Table Top and Field Exercises”</i>
Afternoon	Module 5.2 <i>“Warning and Reporting”</i>	Module 5.4 <i>“Biological Hazards and CIs”</i>	Module 5.6 <i>“Protection from CBRN agents: collective and personal protective procedures and equipment”</i>	Module 5.8 <i>“Intervention Model and Operational Guidelines”</i>	/

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Operational Guidelines

Definition of Operational Guidelines is essential

CI Intervention Groups and First Responders/External Authorities must be able to effectively and quickly intervene in CBRN events response **without overlapping and ensuring high coordination during their activities**

- Operational Guidelines for CI Operators in response to CBRN events **cannot exist without considering the Internal Emergency Plan** already present internally.
- How to Interface an external CBRN Response Plan to an Internal Emergency Plan?

Multi-step Process:

1. Identification of a structure of an appropriate **CBRN Intervention Model** for a CI.
2. Understanding of how the **response to CBRN events already present in the CI can be integrated** with the chosen Intervention Model;
3. Definition of the **package of Operating Procedures** for Operators of a generic CI in response to CBRN events which may be **part of the tactical-operational activities**.


Methodology



Internal Safety Procedures
are defined in the **Operator Safety Plan**
(OSP).

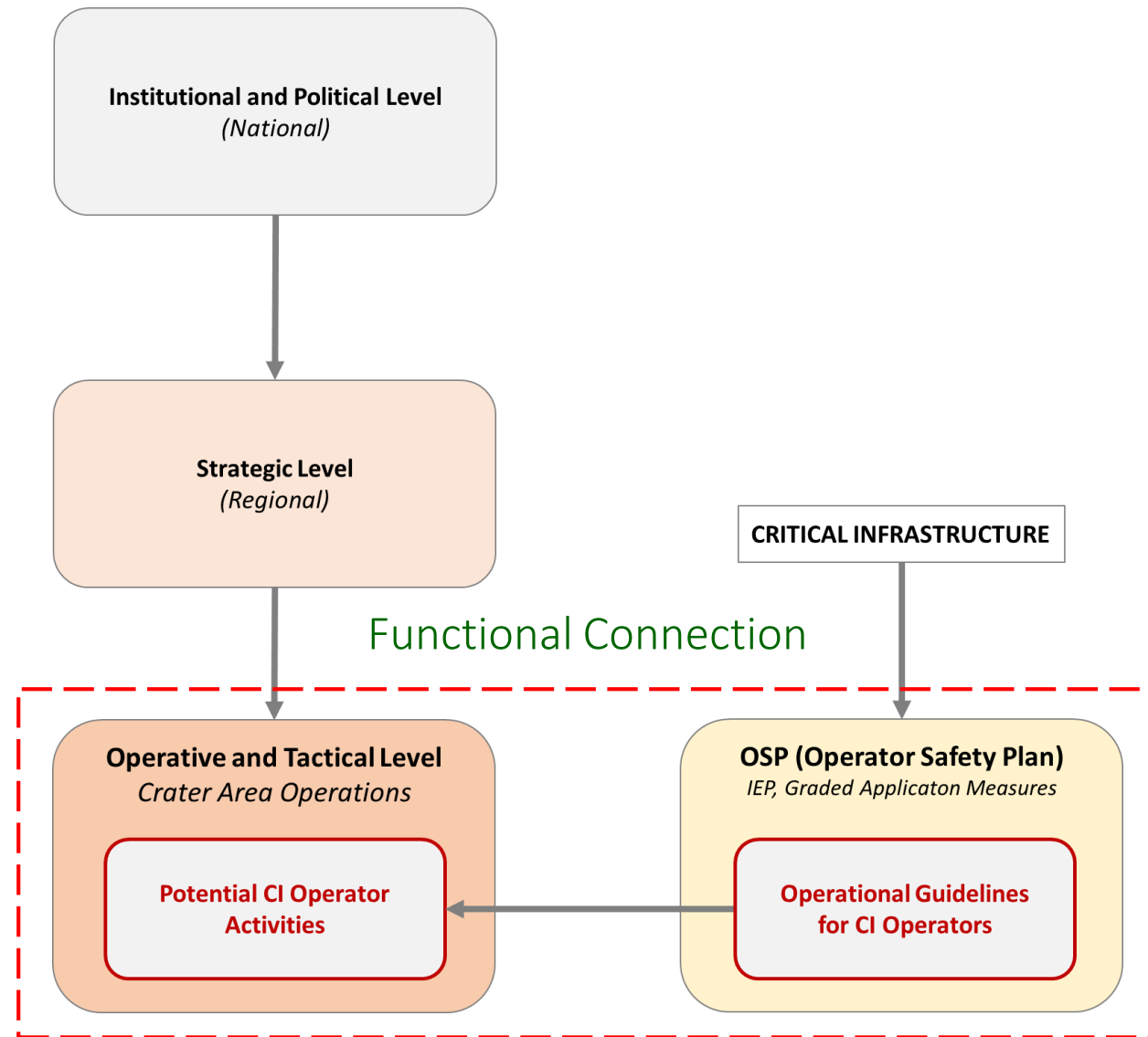
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Generalized Intervention Model



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Intervention Model



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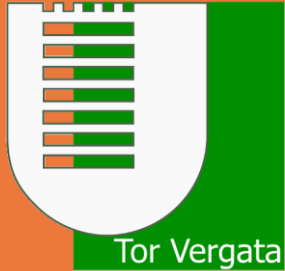


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List of Operational Guidelines

- **OP1:** Operators have to recognize the type of CBRN event/threat by using specific indicators and questions to collect informations;
- **OP2:** Control room operators have to alert the external bodies/authorities, and at the same time the internal emergency response of the CI to CBRN events must be activated;
- **OP3:** The internal operators must prepare themselves by equipping the PPE and other appropriate tools;
- **OP4:** Operators have to support CBRN first responders (Incident Commander and other figures of all the involved bodies) in several activities: securing the area, the personnel, the structure, and the critical activities of the CI; giving information regarding available water resources and safe zones were to transport the victims;
- **OP5:** The role and detailed actions (how to move, who to call etc.) of the Operator are then different based on the ICS and the specific OSP, but in general he will need to offer all the support requested by the incident commander (also at a logistic/tactical level, for example by providing planimetries etc.);
- **OP6:** Operators can also assist first responders in the decontamination procedures;
- **OP7 to OPn:** Customized per specific CI.

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Connection to Intervention Model Activities

Operational Guidelines

Intervention Model Activities

OP Code	Search & Rescue	Detection & Sampling	Decontamination	Medical	Logistic Support
OP1: recognition and collection		Y			Y
OP2: external and internal activation					Y
OP3: PPE equipment		Y	Y	Y	
OP4: support to First Responders	Y				Y
OP5: support to Incident Commander					Y
OP6: support to decontamination			Y		
OP7 to OPn	?	?	?	?	?

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WP2 Validation Workshop

Where: GoToMeeting Web Conference

When: May 5, 2020

Discussion and validation of the training module and operational guideline defined within Work Package 3 on Training Material and Operational Guidelines

Three sessions:

- Presentation of the **list of Training Modules**
- Presentation and discussion of the identified context and list of Operational Guidelines
- Update of the advancement regarding the purchase and distribution of the Intervention Kits for CI Operators

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WP2 Validation Workshop

Where: GoToMeeting Web Conference

When: May 5, 2020



Thank you for your attention!

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