Creation of CBRNE protection system for large area shopping malls

TRAINING CURRICULUM

FOR PREVENTING AND RESPONDING TO THE CBRNE THREATS IN SHOPPING MALLS

Co-funded by the Internal Security Fund
of the European Union
Grant Agreement No. 861643 - Mall-CBRN

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MALL-CBRN CONSORTIUM

University of Lodz, PL (coordinator)
www.uni.lodz.pl

Military Institute of Chemistry and Radiometry, PL
www.wichir.waw.pl

International Security and Emergency Management Institute, SK
www.isemi.sk

National Institute of Aerospace Technology, ES
www.inta.es

Hellenberg International, FI
www.hellenberg.org

ATRIUM Promenada, PL
www.warszawa.promenada.com/en

Military Institute of Hygiene and Epidemiology, PL
www.wihe.waw.pl

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Document description

WP number and title	WP4 – Recommendation for prevention and response procedure to CBRNe terrorist acts D.4.2 – TRAINING CURRICULUM
Lead Beneficiary/ Author(s)	MICR, UniLodz
Contributor(s)/ Author(s)	INTA, ATRIUM PROMENADA, ISEMI, HELLENBERG INT, MIHE,
Document type	Report
Last Update	18.04.2023 V.1.5
Dissemination level	**Public** / Confidential *

** Confidential – only for members of the consortium & EC Services*

Acknowledgement
This project is funded by the European Union's Internal Security Fund — Police
Grant Agreement No. 861643 — Mall-CBRN

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The material for this publication was developed and reviewed by the Mall-CBRN Consortium, Associated Partners and Advisory Board

Abbreviations

BWC – The Biological Weapons Convention (The Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction)

CBRNE – Chemical, Biological, Radiological, Nuclear and Explosive materials

CCP – Critical Control Points

CCTV – Closed-Circuit Television

CWA – Chemical Warfare Agent

CWC – The Chemical Weapons Convention (The Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction)

FPD – Flame Photometric Detector

FM – Facility Management

FTIR – Fourier Transformation Infra-Red

GC – Gas Chromatography

GCMS – Gas Chromatography Mass Spectrometry

GHP – Good Hygienic Practice

GMP – Good Manufacturing Practice

HACCP – Hazard Analysis and Critical Control Points

IMS – Ion Mobility Spectrometry

IR – Infra-red

PPE – Personal Protective Equipment

SM – Shopping Mall

TIC – Toxic Industrial Chemical

TIM – Toxic Industrial Material

UAV – Unmanned Aerial Vehicle

Content

1. INTRODUCTION

Chemical and biological and radiological threats are currently emerging. The European society must take into consideration the associated risks. The use of any of the types of biological, chemical or radiological agents in various acts of terrorism may open the door for the possibility of destabilization of the European Union and lead to undermining economic stability, public security, and integrity in the EU community. The motive of this type of action may be of political, religious, economic or national basis. Potential targets that are vulnerable to be found in the epicentre of the attack include large gatherings of people, places of continuous movement of people. These two key features characterise the large shopping malls which are "perfect" soft target to perform attack on large number of people and to cause a panic in public spaces. Apart of this there is always risks related to the unintentional release of CBRNE agents (chemical plant failure, transport catastrophe, storage facility failure etc.)

Taking those facts into consideration the Mall-CBRN project is aiming at:

- creating prevention, response and consequence management capabilities;
- recommendation for equipment for internal security service and tenants;
- procedures recommendations to be implemented in overall SM security plan;
- provision of trainings for recognized target audiences.

A multidisciplinary team of experienced specialists representing various fields of expertise, will share their experience and transmit professional knowledge of dealing with CBRNE risks, on shopping malls areas. The project represents a novel concept of prevention against CBRNE threats, focused on specific areas which have not been prepared for this type of acts so far.

The aim for this Training Curriculum is to describe methods of knowledge transfer about threats coming from CBRNE agents and methods for minimizing effect of its use to recognized during the project target audiences.

Training material is organized in units which every specific end user (SM) could use to create own training, tailored to specific needs.

Project Consortium

1. UL, University of Lodz, PL (coordinator)
2. ATRIUM Promenada, PL
3. MICR, Military Institute of Chemistry and Radiometry, PL
4. ISEMI, International Security and Emergency Management Institute, SK
5. INTA, National Institute of Aerospace Technology, ES
6. HI, Hellenberg International, FI
7. MIHE, Military Institute of Hygiene and Epidemiology, PL

2. TRAINING MODEL

The training material and structure is built on the multiple-level concept. At the first level the trainees are provided with theoretical knowledge about CBRNE threats. At the next level, another load of theoretical knowledge describing possible threat reduction methods is provided . Finally, at the third level the freshly acquired theoretical knowledge is put into practice by presenting behavioural patterns, best practices and acting procedures to be followed in preventing and reacting to a security incident of CBRNE nature. That very last step of learning takes the form of practical exercises where the acquired knowledge is used in solving CBRNE security and safety problems presented in the simulated scenarios.

The course is thus based on seeding the fundamental knowledge through its duration and further mastering that knowledge. The mastering stage takes place at the third level of learning and can be done by implementing one of the practical techniques (i) “learning by doing” (ii) “reflective training” or (iii) “training at a workplace”. In “learning by doing” the trainees receive an appropriate amount of input in the form of lectures case studies, videos, presentations, etc., second, they relate that knowledge to their own experiences and knowledge. Next, the trainees need to complete the exercises in which they apply the theoretical input and reflect on what they have learnt in the module. Practising takes the form of once or periodically undertaken exercises where the management, whether hiring a professional trainer or using an in-house workforce, creates a situational environment to which the trainees respond using the procedures and acquired knowledge. Doing that the trainees reflect on the taught input, and undertake the required actions relating them to their professional context. This kind of training is a linear process and is composed of information transmission-reflective skills building – mastering blocks (Fig. 1).

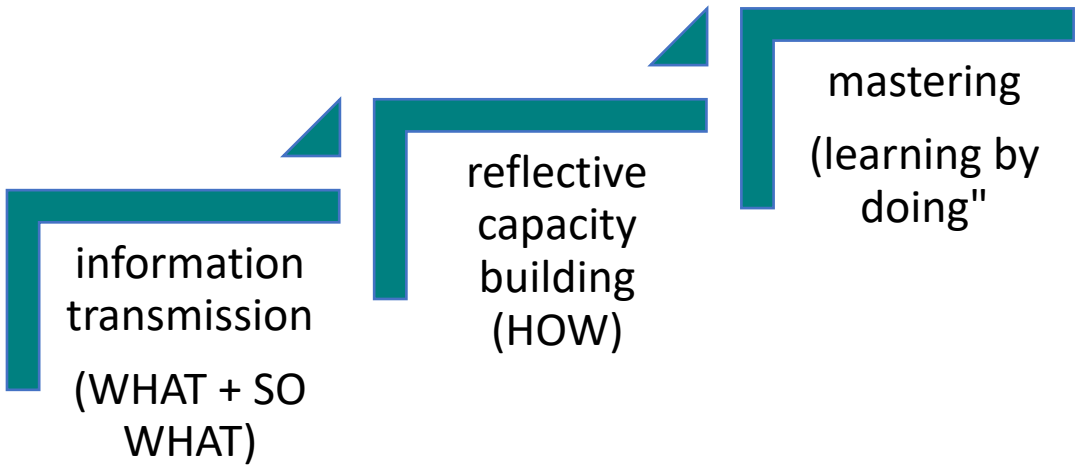

Figure 1: The linear learning process including “learning by doing” stage

The two other forms of practical training the “reflective training” and “at a workplace” training, are based on the elements of learning methodology commonly known as “experiential learning” and require the deeper involvement of the trainees. In the “reflective training”, the trainees participate in the exercises arranged in a way similar to those in “learning by doing”. Still, they are expected to merge their professional experience with the taught knowledge. The exercise input is followed by a reflection stage leading to improvement and mastering the actions. That stage is particularly useful when building prevention capacities in the work environment. However, its use is limited when it comes to the response stage, where following the procedures rather than reflection dominates. The “at a workplace” training may be categorised as experiential training too but is built on different elements than theabove-discussed reflective training. The “at a work place” training more resembles permanent learning. The employees approach their daily duties with the goal set by the management, eg . closing security gaps” “identifying vulnerabilities” “improving resilience” etc. The results of their findings and reflections are summarised periodically and shared during the periodical meetings. The latter type of learning shall begin from the managerial level and have its strict organisational frames to maintain learning spirit throughout daily time flow. It strongly relies on culturally embedded behaviour so requires building an organisational safety/security culture in the company as an indispensable component of the corporate culture.

In “experiential training” the trainees should follow a reflective cycle (Fig.2) during the whole work course as well as in each unit .

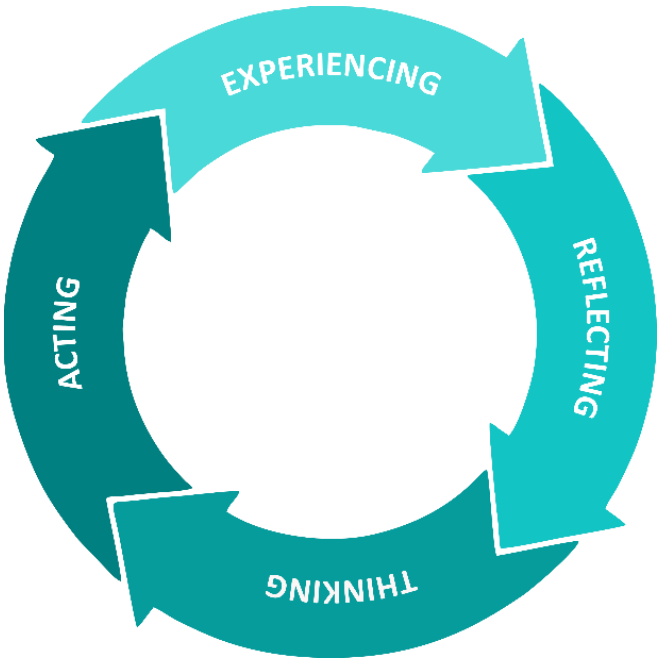

Figure 2: The reflective cycle as the basic principle of knowledge practicing

Experiencing block of Fig 2 is expanded in Figure 3 and constitutes of:

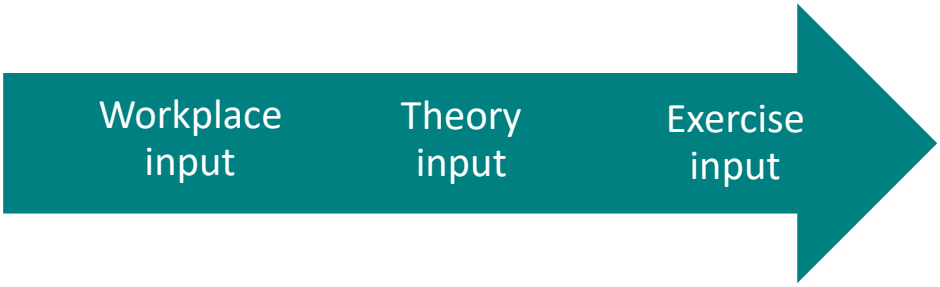

Fig. 3 Experiencing in "experiential training"

Exercise input may mean:

- Result of a scenario-based exercise, part of a reflective training
- Periodical summary from exercise "at a workplace"

REFLECTING – WHAT did the experiencing bring

THINKING – SO WHAT or HOW planning implementation measures

ACTING – working the outcomes of the periodic summaries out

According to developed during the Project methodology and organization, most of all trainings carried-on within the Project duration will be executed in the particular SM. This was recognized as important by the consortium members representing the end users: Atrium and other SM operators affiliated with the Polish Chamber of Shopping Malls (PCSM - the biggest body representing businesses of shopping malls' operators in Poland, consisting of strong international organizations operating in many EU countries). Thanks to this approach all the trained people (apart from management staff) will be trained not in the artificial environment but in the real one which will lead to the effectiveness of the practical implementation of knowledge. Training for management staff is different due to the strong need to fully comprehend the complexity of CBRNE security resulting from threats and multi-layered awareness building, prevention and, threat reduction.

To provide this kind of knowledge, a practical training is needed, preferably with cooperation with local recue services involved in response to CBRNE attack or incident like Firefighters, Police, EMS and army.

The training curriculum was created with close cooperation with end users and time restrictions for each target audiences were taken into consideration. The dedicated course has to be long enough to transfer relevant knowledge but not too long as it could create unneeded logistics problems and financial pressure on SM operators/tenants resulting in eschewing such trainings.

3. AIMS OF THE TRAINING AND TARGET GROUPS

During the project through intensive experience exchange with end user partners 4 groups of target audience were identified:

- Technical Staff
- Security
- Tenants
- Management

Description of each group is provided in "Handbook for preventing and responding to the CBRNE threats in shopping malls" chapter 2.2.

Each group has different duties and responsibilities so different material should be provided. Nevertheless, some parts of material are relevant to all groups (recognition of CBRNE incident, evacuation etc.). Even if people are taught in particular topics, different levels of detail must be provided. In this chapter, specific aims for each target group will be provided.

For each target group, learning aims and outcomes are presented below.

Technical Staff

No	Topic	Scope
TS 1	Knowledge about CBRNE agents	• General characteristics of CBRNE agents • Main differences between C, B and R – agents • Max 3 examples of CBRNE incidents from the past to raise the awareness level and to show the threat is real
TS 2	Description of CBRNE threats	• Presentation of specific items which could be used for a CBRNE attack
TS 3	Detection of CBRNE incident	• Symptoms and indicators of a CBRNE attack • Equipment used for attack detection (existing in the venue or recommended) • Special attention to the Food delivery chain
TS 4	Personal protective equipment	• Types of skin and respiratory PPE (available in the venue or recommended)
TS 5	Critical infrastructure in the venue	• Presentation of most likely places for a CBRNE attack (relevant for the group – excluding external threats, letters etc.)

		• Examples of possible attack scenarios • Vulnerable response procedures (relevant to the group – Ventilation and technical installations)
TS 6	Informing and notifying	• Notification plan (relevant for the group only)
TS 7	Procedures	• Searching methodology • 1,2,3 + • METHANE • Shelter in place • Initial decontamination • Remove, remove, remove • Cleaning surface • Left item – informing only • Infected person
TS 8	Evacuation	• Evacuation or shelter in place decision • Routes of exit • Assembly points
TS 9	Equipment availability	• Examples of equipment available (for the group) • Localization of eq. • Rules of using it

Security

No	Topic	Scope
S 1	Knowledge about CBRNE agents	• General characteristic of CBRNE agents • Main differences between C, B and R – agents • Max 3 examples of CBRNE incidents from the past to raise awareness level and to show the threat is real
S 2	Description of CBRNE threats	• Intentional threats • Unintentional threats • Methods of dissemination of agents • Restrictions to CBRNE attack • Presentation of specific items which could be used for CBRNE attack
S 3	Detection of CBRNE incident	• Symptoms and indicators of a CBRNE attack • Equipment used for attack detection (existing in the venue or recommended)

No	Topic	Scope
		• Special attention to the Food delivery chain
S 4	Personal protective equipment	• Types of skin and respiratory PPE (available in the venue or recommended) • PPE used during evacuation (escape hoods, gloves)
S 5	Critical infrastructure in the venue	• Presentation of most likely places for a CBRNE attack (relevant for the group – including external threats, letters etc.) • Examples of possible attack scenarios at each point
S 6	Prevention	• Safety systems • CCTV • Access control • Anti-theft (intruder) systems • Interlocking door system • Monitoring room • Antiterrorist facility protection (bollards, barriers, landscape objects etc.)
S 7	Procedures	• Searching methodology • 1,2,3 + • METHANE • Shelter in place • Initial decontamination • Remove, remove, remove • Food court (more careful observation) • CBRNE bomb planting information • Bomb threat (dirty bomb) • Left item • Parcels/ letters • Infected person • Ventilation system • UAV • Vehicle • Technical installations • External threats
S 8	Evacuation	• Evacuation importance and principles • Evacuation plan • Evacuation vs invacuation vs shelter in place • Phases of evacuation • Managing people in assembly points

No	Topic	Scope
		• Managing contaminated material (clothes, shoes, valuable items, etc.)
S 9	Informing and notifying	• Rules for Information and notification • Internal and external I&N • Notification plan (whole)

S 10	Equipment availability	• Description and practical use of available equipment
		  ○ Medical rescue Bag
		  ○ Grab Bag
		  ○ Initial Decontamination Kit
		  ○ C&C escape case
		• Localization of eq.
		• Rules of using it

Tenants

No	Topic	Scope
T 1	Knowledge about CBRNE agents	• General characteristics of CBRNE agents • Main differences between C, B and R – agents • Max 3 examples of CBRNE incidents from the past to raise awareness level and to show the threat is real • At least one example of a CBRNE attack on the Food Court
T 2	Description of CBRNE threats	• Intentional threats • Unintentional threats • Methods of dissemination of agents • Restrictions to CBRNE attack • Presentation of specific items which could be used for CBRNE attack
T 3	Detection of CBRNE incident	• Symptoms and indicators of a CBRNE attack • Equipment used for attack detection (existing in the venue or recommended) • For FC tenants, dedicated training will be provided based on best practices developed during WP5
T 4	Personal protective equipment	• Types of skin and respiratory PPE (available in the venue or recommended) • PPE used during evacuation (escape hoods, gloves)

No	Topic	Scope
T 5	Critical infrastructure in the venue	• Presentation of most likely places for a CBRNE attack (relevant for the group – including gas, water, clean air installations, and other critical infrastructure nearby) • Examples of possible attack scenarios at each point
T 6	Prevention	• Safety systems • CCTV • Access control • Anti-theft (intruder) systems • Interlocking door system
T 7	Procedures	• 1,2,3 + • Methane • Initial decontamination • Remove, remove, remove • Food court (basic information, more detailed during Food Safety Best Practices training) • Left item • Infected person • Ventilation system • Technical installations
T 8	Tenants procedures	• Space control • Access control • Employee training (evacuation plan, routes of exit, first aid) • Emergency response • Post evacuation actions
T 9	Evacuation	• Evacuation or shelter in place decision • Evacuation from premises • Routes of exit • Assembly points
T 10	Shelter in place	• Rules for sheltering in place • Evacuation vs invacuation vs shelter+ in+ place • Communication • Reporting
T 11	Informing and notifying	• Rules for Information and Notification • Internal I&N • Notification plan (relevant to the group)
T 12	Equipment availability	• Description and practical use of available equipment

No	Topic	Scope
		○ PPE ○ Initial Decontamination Kit • Localization of eq. • Rules of using it

Management

No	Topic	Scope
M 1	Knowledge about CBRNE agents	• General characteristic of CBRNE agents • Physical, chemical and toxicological properties of most probable/dangerous agents • Main differences between C, B and R – agents • Examples of CBRNE incidents from the past to raise awareness level and to show the threat is real • Examples of attack on the Food Court • Statistics from the past (number of attacks per category, number of victims) • Errors during response
M 2	Description of CBRNE threats	• Intentional threats • Unintentional threats • National terrorism threat levels • Methods of dispersion of agents • Restrictions to CBRNE attack • Presentation of specific items which could be used for CBRNE attack
M 3	Detection of CBRNE incident	• Symptoms and indicators of a CBRNE attack • Available CBRNE agents detection technologies • Important CBRNE detection equipment parameters • Detection of equipment limitations • Equipment used for attack detection (existing in the venue or recommended)
M 4	Personal protective equipment	• Description of PPE categories and protection levels • Factors influencing decision about use of proper PPE

		• Types of skin and respiratory PPE (available in the venue or recommended) • PPE used during evacuation (escape hoods, gloves)
M 5	Critical infrastructure in the venue	• Presentation of most likely places for a CBRNE attack (relevant for all the venues and all the threats) • Examples of possible attack scenarios

M 6	Preparedness	• CBRNE response plan (as a part of the Security plan)
		• CBRNE Evacuation plan (as a part of evacuation /security plan)
		• I&N plan
		• Vulnerability assessment tool
		  ○ Factors to be taken into consideration
		  ○ Impact vs probability
		  ○ Periodical reassessment (or after national alarm level change)
		• CBRNE training as a part of ordinary training for staff, security officers, tenants and management
		• Periodical practical exercises
		  ○ TTX
		  ○ Stress tests
		  ○ CBRNE aspects during obligatory fire prevention trainings and exercises

M 7	Prevention	• Safety systems • CCTV • Access control • Anti-theft (intruder) systems • Interlocking door system • Monitoring room • Antiterrorist facility protection (bollards, barriers, landscape objects etc.)
M 8	Procedures	• Searching methodology • 1,2,3 + • Methane • Shelter in place • Initial decontamination • Remove, remove, remove • Cleaning surfaces • Tenants procedures • Food court (more careful observation) • CBRNE bomb planting information • Bomb threat (dirty bomb)

		• Left item • Parcels/ letters • Infected person • Ventilation system • UAV • Vehicle • Technical installations • External threats
M 9	Evacuation	• Evacuation importance and principles • Evacuation plan • Evacuation vs invacuation vs shalter in place • Phases of evacuation • Managing people in assembly points • Managing contaminated material (clothes, shoes, valuable items, etc.)
M 10	Informing and notifying	• Rules for Information and Notification • Internal and external I&N • Notification plan (whole)

M 11	Equipment availability	• Description and practical use of available equipment
		  ○ PPE
		  ○ Medical rescue Bag
		  ○ Grab Bag
		  ○ Initial Decontamination Kit
		  ○ C&C escape case
		• Localization of eq.
		• Rules of using it

4. LEARNING OUTCOMES

Technical Staff

No	Learning outcome	Knowledge level	Unit number
1	To understand threats coming from C, B and RN agents and differences between them	Basic	1.1, 1.2, 1.5
2	To recognize suspicious equipment which could be used for an CBRNE attack	Basic	2.1, 2.2, 2.3
3	To recognize CBRNE incident	Medium	2.1, 2.2, 3.1
4	To know how to protect yourself from CBRNE agent	Basic	4.1,4.3, 4.4, 4.6
5	To identify vulnerable points in SM which are the most susceptible to attack	Basic	5.1
6	To know which information are relevant for decision making process in case of CBRNE incident	Basic	8.1
7	To inform relevant people within organization to act as fast and efficient as possible	Medium	8.1, 9.1, 9.5 -9.9
8	To know how to prevent and act during CBRNE incident (to conduct relevant procedures - listed in table TS 7)	Basic	9.1, 9.5 -9.9
9	To know how to evacuate yourself in case on CBRNE incident (importance of time and exposure reduction, exit ways, assembly points, how to help without increasing own risk, etc.)	Basic	11.1, 11.3 – 11.6
10	To be familiar with available equipment	Medium	4.3,4.4, 6.3, 6.4

Security

No	Learning outcome	Level	Unit number
1	To understand threats coming from C, B and RN agents and differences between them	Basic	1.1, 1.2, 1.5
2	To recognize suspicious behaviour and equipment which could be used for an CBRNE attack	Medium	2.1, 2.2, 2.3 2.4, 2.5
3	To recognize CBRNE incident type and it's type (attack, unintentional release)	Medium	3.1, 3.2, 3.4, 3.6
4	To know how to protect yourself from CBRNE agent and to help SM visitors	Medium	4.1, 4.3, 4.4, 4.6
5	To identify and focus attention to critical places in SM which are the most susceptible to attack	Medium	5.2, 5.4, 5.5
6	To know how to use available security systems	High	6.1 – 6.4
7	To know which information are relevant for decision making process in case of CBRNE incident	High	7.1, 7.2, 7.4, 8.2, 8.3
8	To inform relevant people within organization to act as fast and efficient as possible	High	8.2, 8.3
9	To know how to prevent and act during CBRNE incident (to conduct relevant procedures - listed in table S 7)	Medium	9.2, 9.5-9.9
10	To know the whole process of evacuation and be able to execute evacuation and manage evacuated people till the arrival of relevant services (Firefighters, Police, EMS etc.)	High	11.1-11.8, 11.10,11.11
11	To be familiar with available equipment	Medium	3.6, 4.3, 4.4, 4.6, 6.3, 6.4

Tenants

No	Learning outcome	Level	Unit number
1	To understand threats coming from C, B and RN agents and differences between them	Basic	1.1, 1.2, 1.5
2	To recognize suspicious behaviour and equipment which could be used for an CBRNE attack	Medium	2.1-2.4
3	To recognize CBRNE incident type and it's type (attack, unintentional release)	High	2.1-2.4 3.1
4	To know how to protect yourself from CBRNE agent and to help SM visitors	Medium	4.1, 4.3, 4.4, 4.6
5	To identify and focus attention to critical places in SM which are the most susceptible to attack	Medium	5.3
6	To know how to use available security systems	Basic	6.1
7	To know which information are relevant for decision making process in case of CBRNE incident	Basic	8.1
8	To prevent and prepare own venue for an CBRNE accident (to conduct tenants procedures)	High	10.1, 10.2
9	To know how to prevent and act during CBRNE incident (to conduct relevant procedures - listed in table T 7)	Medium	9.3, 9.5-9.9
10	To know the whole process of evacuation and be able to support evacuation (especially within evacuation phase II, stage I – evacuation from premises)	Medium	11.1, 11.3-11.6
11	To be familiar with available equipment	Medium	4.4, 4.6, 6.3, 6.4

Management

No	Learning outcome	Level	Unit/ task number
1	To understand threats coming from C, B and RN agents and differences between them	High	1.1 ,1.2, 1.3, 1.4, 1.6
2	To recognize suspicious behaviour and equipment which could be used for an CBRNE attack	Medium	2.1-2.5
3	To recognize CBRNE incident type and it's type (attack, unintentional release)	High	2.1-2.5 3.1-3.5, 3.7, 3.8
4	To know how to protect yourself from CBRNE agent and to help SM visitors	High	4.1-4.3, 4.5, 4.7
5	To identify and focus attention to critical places in SM which are the most susceptible to attack	High	5.2, 5.4, 5.5
6	To know how to use (or adopt to current situation) security systems	High	6.1 -6.4
7	To know which information are relevant for decision making process in case of CBRNE incident	High	7.1-7.4, 8.2-8.3
8	To inform relevant people within organization and external services to act as fast and efficient as possible	High	8.2-8.3
9	To prepare own venue to an CBRNE accident (CBRNE response and evacuation plans, I&N plan, vulnerability assessment, trainings, exercises)	High	7.1-7.4
10	To know how to prevent and act during CBRNE incident (to conduct relevant procedures - listed in table M 8)	High	9.4-9.9
11	To know the whole process of evacuation and be able to execute evacuation and manage evacuated people till the arrival of relevant services (Firefighters, Police, EMS etc.)	High	11.1-11.11
12	To be familiar with available equipment	Medium	4.3, 4.5, 4.7, 6.3, 6.4

5. UNIT CARDS

11 learning units are needed to provide trainees with all the relevant material to all target groups. Some units are dedicated to particular target group to focus. There are different levels of knowledge in each unit depending on the target audience. Information about applicability of a topic to specific target group is provided together with the content of the topic, type of interaction, equipment needs, required place for the training and time needed – all in an easy to read form of a table.

1. Knowledge about CBRNE agents
2. Descriptions of threats
3. Detection of CBRNE incident
4. Personal protective equipment
5. Critical infrastructure in the venue
6. Prevention
7. Preparedness
8. Informing and notifying
9. Relevant procedures
10. Tenants procedures
11. Evacuation

Unit 1: Knowledge about CBRNE agents

Description:

This module is focused on provision of information about CBRNE agents and it's properties and raising awareness level by presentation of real terrorist attack information from the past

Knowledge gained:

- Classification of agents and differences between agent classes and between agents within a class
- Important properties of agents and its influence on health effects and detection, protection and decontamination

Skills gained:

- Recognition of priorities of own protection

Task no	Task name	Time [min]	Content	Type of interaction	Equipment needed	Place of training	Target group
1.1	General characteristic of CBRNE agents	15	• Historical background (examples) • Classes of agents (C, B, RN) • State of agents (Liquid, Gas, Solid) • Stability in time • Availability • Toxicity • Routes of exposure • Classification of agents C, B and RN (Nerve, blister, acid, bases, red-ox, viruses, bacteria, alfa, beta …)	Presentation	• Multimedia eq.	Classroom	All

1.2	Differencies between CBRNE agents	10	• time of effect • detection • self-reproduction vs decomposition vs half life time • protection • ways of entry • detonation stability	Presentation	• Multimedia eq.	Classroom	All
1.3	Properties of most probable CBRNE agents	15	• Physical, chemical and toxicological properties of most dangerous agents: Sarin, mustard, ammonia, chlorine, Antrax, Co, Cs137 affecting: ○ health effects ○ detection ○ protection ○ decontamination	Presentation	• Multimedia eq.	Classroom	M
1.4	Properties of most probable CBRNE agents	45	• Observation of differences in detection of volatile and non-volatile C agents	Practical exercise	• CWA (LCD 3.3 or AP4C) • CWA generator • CW agents (GB, HD) - PPE – gas mask, Tychem suit, gloves	Laboratory (demo)	M
		15	• Practical exercises on decon efficiency after short and long exposure	Practical exercise	• Pig skin • UV active liquid • UV lamp • IPLS 1 (personal decon set) • stoper – x4	Laboratory	M

1.5	Examples of CBRNE attacks	10	• 3 (C, B and RN) examples of CBRNE terrorist attacks/incidents from the past (including one in Food Court)	Presentation	• Multimedia eq.	Classroom	TS S T
1.6	Examples of CBRNE attacks	20	• 3 (C, B and RN) examples of CBRNE terrorist attacks/incidents from the past (including one in Food Court) • short statistics about CBRNE attacks in the past • errors made during preparation or response actions	Presentation	• Multimedia eq.	Classroom	M

Unit 2: Description of CBRNE threats

Description:

This module is design to present in easy to understand form threats coming from CBRNE different incident types. Information of types of intentional an unintentional releases are provided. Apart of that methods and means of delivery of a CBRNE agent to the victim are shortly presented which could be important for detection of attack and early warning.

For management staff additional information are provided supporting better preparedness and early detection of an attack attempt.

Knowledge gained:

- Types of CBRNE agent releases
- Methods and equipment for agents delivery
- National alarms levels for terrorist activity

Skills gained:

- Recognition of suspicious item
- Recognition of moment of attack

Task no	Task name	Time [min]	Content	Type of interaction	Equipment needed	Place of training	Target group

2.1	Types of CBRNE incidents	15	• Intentional releases:
			  ○ terrorist attacks
			  ○ crime
			  ○ psychologically driven attack
			• Unintentional releases:
			  ○ road accident
			  ○ nearby facility accident
			  ○ rail, river, sea transport catastrophe
				Presentation	• Multimedia eq.	Classroom	All

2.2	Methods of dissemination of agents	15	• Direct exposure • Indirect exposure • Dispersion methods • Dirty bomb • Hidden R source	Presentation	• Multimedia eq.	Classroom	All
2.3	Equipment which used for an CBRNE attack	15	• Presentation of different types of equipment which was, or could be, used for dispersion of an agent	Presentation	• Multimedia eq.	Classroom	All

2.4	Restriction of CBRNE attack	15	• Perpetrator self-protection:
			  ○ use of PPE – gas mask, gloves
			  ○ shielding material - heavy R container
			  ○ distance trigger (left item)
			• Access to an agent
			• Agent properties (purification vs odour)
			• Production restrictions (chemicals availability and tracking, R sources control)
				Presentation	• Multimedia eq.	Classroom	S,T, M

2.5	National alarm levels	10	• Description of each alarm level • Constant monitoring of the level • Trigger level in SM Security plan • Actions to be undertaken after alarm rise	Presentation	• Multimedia eq.	Classroom	S, M

Unit 3: Detection of CBRNE incident

Description:

The purpose of this unit is to help understand why early detection of an CBRNE attack is important and how to do it. Differences between C, B and RN types of attacks are presented together with indicators of and attack. Information presented here could ease CBRNE attack detection without additional equipment.

In next part general requirement for equipment are provided together with equipment recommendations to make detection more reliable.

Knowledge gained:

- Differences between C, B and RN attacks or incidents
- Indicators of CBRNE attack
- Important parameters of detection equipment
- Recommendations for enhancing SM detection capabilities

Skills gained:

- Recognition of an CBRNE attack
- Recognition of probable type of attack (C or B or RN)
- Ability to recognize the most important features of equipment needed

Task no	Task name	Time [min]	Content	Type of interaction	Equipment needed	Place of training	Target group
3.1	Differences between C, B and RN attacks	15	• Differences between C, B and RN attacks: ○ General mechanisms of action ○ Accessibility to agents	Presentation	Multimedia eq.	Classroom	All

			○ PPE needed/used by perpetrators ○ Ways of exposure • Indicators of attack or release: ○ Agent vs time ○ Symptoms vs agent type ○ Psychologically driven attack				
3.2	Important equipment parameters	20	• Expected threat from nearby facilities • Operational parameters (detection scope, time, LoDs, limitations) • Logistic parameters (power and media needs) • Financial parameters (cost of purchase, ongoing costs) • Personal needs (simplicity, education level needed, training needs)	Presentation	• Multimedia eq.	Classroom	S, M
3.3	Important equipment parameters	60	• Detection of CWA with different volatility • Detection of TIC in gaseous form • Detection of Bio agents by bioluminometry • Searching for hidden R source	Practical exercises	• IMS and FPD based CWA detectors • TICs detector with different sensors • bioluminometry • Dosimeters	Laboratory	M

3.4	Recommendation for detection equipment	15	• Human senses vs agent type • Toxicity vs human senses • Recommendation of C, B and RN equipment	Presentation	• Multimedia eq.	Classroom	S, M
3.5	Recommendation for detection equipment	30	• Practical use of recommended CBRNE detection equipment • Tests with simulants • Interpretation of results	Practical exercises	• IMS and FPD based CWA detectors • TICs detector with different sensors • Bio rapid 5 tests • Biolomininmetry • Dosimeters • Portable spectrometers	Laboratory	M
3.6	CBRNE detection equipment	15	• Practical exercises with detection equipment present in SM	Practical exercise	• Two sets of detection devices per agent type (C, B, RN) • simulants or agents (chlorine, ammonia) for detection	Classroom	S
3.7	CBRNE detection equipment	30	• When to use (trigers)? • C detection: Colorimetric detectors, IMS, FPD, Raman, FTIR, GC- MS • B detection: rapid tests and/or bioluminometry	Presentation	• Multimedia eq. • Examples of detection devices to play with other than used in practical part)	Classroom	M

			• RN detection: personal dosimeter and contamination detectors				
3.8	CBRNE detection equipment	45	• Practical exercises with detection equipment with real agents: ○ C detection: FPD, IMS, Raman detection of real agents – 30 minutes ○ B detection: bioluminometry and rapid test vs white powder (on safe simulants) – 30 minutes ○ RN detection: Finding an active sources in hidden spaces wit personal dosimeter, contamination monitor and spectrometer – 30 minutes	Practical exercise	• Two sets of detection devices per agent type (C, B, RN) • simulants or agents (chlorine, ammonia) for C detection • Rad sources • Bio simulants	3 x Laboratories	M

Unit 4: Personal Protective Equipment

Description:

In this unit description of different types of PPE will delivered to trainees at relevant to their duty's level.

Description of equipment classes will be provided. Each equipment type limitations will be discussed to help understand situation when trainees can use it and when it is irrelevant. For decision makers rules for equipment selection will be presented together with recommendations.

Knowledge gained:

- Different PPE types
- Meaning of "Personal" in PPE
- Applicability PPE to the threat
- Rules for proper PPE selection
- PPE recommendations

Skills gained:

- Recognition of an PPE needed
- Decision of PPE selection
- To know how to put on and off PPE safely
- Ability to update existing safety procedures

Task no	Task name	Time [min]	Content	Type of interaction	Equipment needed	Place of training	Target group
4.1	Types of PPE	15	• Personal meaning ○ appropriate size and sometimes type (ie. MP5 gas mask: French vs Polish face shapes)	Presentation	• Multimedia eq. Examples of PPE presented	Classroom	All

			○ Fit factor - 95 % • Presentation of different types of PPE ○ eye protection ○ respiratory protection ○ skin protection				
4.2	Types of PPE	45	• Gas mask efficiency test • Demonstration of skin protection efficiency in chlorine tent	Practical exercise	• Multimedia eq. • Examples of PPE presented • Laser particle counter • Tent for chlorine tests • 4 people for Chlorine test	Laboratory Field	M
4.3	Wearing PPE	25	• Practical exercises with examples of hand, skin and respiratory equipment - putting them on and off	Practical exercise	• Gloves • PPE protective suit • Gas masks • Banana oil	Classroom	All
4.4	Rules for PPE selection	15	• Agent vs PPE type • Most important routes of exposure • Time vs PPE • My PPE – type, size, its location, its limitations	Presentation	• Multimedia eq.	Classroom	TS, S, T
4.5	Rules for PPE selection	30	• Agent vs PPE type • Most important routes of exposure • Time vs PPE	Presentation	• Multimedia eq.	Classroom	M

			• My PPE – type, size, its location, its limitations • More sophisticated PPE • PPE vs duties during CBRNE attack / evacuation • Use of PPE as an additional step in relevant security plan/ procedures				

4.6	PPE	30	• Practical use of PPE:
			  ○ gloves
			  ○ gas masks
			  ○ rescue masks
			  ○ protection clothes and its limitations
				Practical exercises	• 2 sets of each type of protection eq.
					• Screen or shield
						Classroom	Ts, T, S

4.7	PPE	60	• Practical use of PPE:
			  ○ gloves
			  ○ gas masks (including efficiency test)
			  ○ rescue masks
			  ○ protection clothes and its use in contaminated area
				Practical exercises	• 2 sets of each type of protection eq.
					• Screen or shield
					• Tent with chlorine
						Filed	M

Unit 5: Vulnerable points

Description:

This unit is designed to describe differences between currently well- known threats and threats coming from CBRNE agents. The most vulnerable points are presented. Those points are divided into two groups: internal and external ones. At the end of the unit a tool for self -assessment is presented. This tool is available for SM workers (especially for Management, Security and Tenants group).

Knowledge gained:

- Possible vulnerable points and situations at SM

Skills gained:

- Ability to recognition of vulnerable points at specific, own, SM

Task no	Task name	Time [min]	Content	Type of interaction	Equipment needed	Place of training	Target group
5.1	Vulnerable points pack A	15	• Presentation of vulnerable points relevant to target group: ○ infected person ○ fountain ○ ice rink ○ left luggage / object ○ ventilation system ○ technical installations	Presentation	• Multimedia eq.	Classroom	TS
5.2	Vulnerable points pack B	20	• Presentation of vulnerable points relevant to target group: ○ parcels / letters ○ infected person ○ fountain ○ ice rink ○ left luggage / object	Presentation	• Multimedia eq.	Classroom	S, M

			○ Ventilation system ○ UAV ○ Vehicle ○ Technical installations ○ External threats				
5.3	Vulnerable points pack C	10	• Presentation of vulnerable points relevant to target group: ○ parcels / letters ○ infected person ○ left luggage / object ○ vehicle attack	Presentation	• Multimedia eq.	Classroom	T
5.4	External threats	20.	• Presentation of CBRNE threats coming from outside of the venue: ○ leaks or other non-intentional releases from transportation of dangerous goods: road, river, sea, pipe transport ○ CBRNE attacks with the use of stolen, hijacked means of transportation – ADR ○ leaks or releases from nearby factories or storage facilities	Presentation Presentation of Warning and Reporting and Hazard Prediction of Chemical, Biological, Radiological and Nuclear Incidents - ATP 45 – Example for specific SM	• Multimedia eq.	Classroom	M, S
5.5	Vulnerability assessment register	15	• Description and practical exercise with VAR • Action to be taken as a result of assessment	Presentation Class	• Multimedia eq.	Classroom	S, M

Unit 6: Prevention

Description:

The information provided in this unit are important to avoid an attack or make it difficult. Most of presented systems are already used in SMs and trainees could learn how they could be used to deter CBRNE attack.

Knowledge gained:

- Information about available security systems, theirs abilities and equipment helpful during CBRNE response action

Skills gained:

- Ability to use commercially available security systems to prevent/ detect to CBRNE attack
- How to prepare SM to response in case of CBRNE attack
- How to use emergency equipment

Task no	Task name	Time [min]	Content	Type of interaction	Equipment needed	Place of training	Target group
6.1	Safety systems	10	• Presentation of available components of security systems: ○ CCTV ○ access control ○ anti-theft/ anti-intruder systems ○ interlocking door systems ○ monitoring room • Special rules for the use of security systems during an CBRNE incident	Presentation	• Multimedia eq.	Classroom	All
6.2	Anti-terrorist facility protection	10	• Presentation of description of available AT systems/ facilities: ○ bollards ○ AT vehicle barriers ○ reinforced landscape objects	Presentation	• Multimedia eq.	Classroom	S, M

6.3	Emergency equipment	10	• Presentation of available emergency equipment: ○ medical rescue bag ○ evacuation “grab bag” ○ initial decontamination bag ○ command and control escape bag	Presentation	• Multimedia eq.	Classroom	All
6.4	Emergency equipment - practical use	20	• Practical use of available emergency equipment: ○ medical rescue bag ○ evacuation “grab bag” ○ initial decontamination bag ○ command and control escape bag	Practical exercise	• Multimedia eq. • Equipment for training 2 sets of each type	Classroom / Field (if e. is present at the SM)	TS, S, M

Unit 7: Preparedness

Description:

This unit is dedicated to decision makers and people in charge of security of the SM or venue. Reaction to CBRNE incident must be fast and appropriate to be effective. It means that people and equipment needed must be well prepared for this kind of attack. Moreover proper use and even good "presentation" of security systems could convince perpetrators to attack other, less prepared, facility.

Knowledge gained:

- Importance of reaction plans to CBRNE attack/incident
- List of plans to be prepared
- Tools for improvement of CBRNE preparedness

Skills gained:

- To know actions specific to CBRNE attack/incident
- To know how to do vulnerability CBRNE attack self-assessment
- To monitor overall terrorist safety level and how to react to its changes

Task no	Task name	Time [min]	Content	Type of interaction	Equipment needed	Place of training	Target group
7.1	Important documents in case of CBRNE attack/incident	20	• Presentation and discussion about most important documents in case of CBRNE attack/incident: ○ CBRNE response plan ○ CBRNE evacuation plan ○ I&N plan ○ location in security documents structure	Presentation discussion	• Multimedia eq.	Classroom	M, S

7.2	Vulnerability assessment tool	30	• Exercise – work in groups • Creation of own VAR • Conclusion and action after VAR • Update of VAR – when, why, what?	Practical exercise	• Multimedia eq.	Classroom	M, S

7.3	Maintaining competencies	10	• Trainings:
			  ○ target oriented (TS, S, T, M)
			  ○ initial, periodical, incidental
			  ○ theoretical vs practical
			• Exercises:
			  ○ stress tests
			  ○ TTX
			  ○ bilateral exercise with firefighters
			  ○ multi-agency exercise (as a part of an obligatory exercises, like fire evacuation)
			• Updating documents:
			  ○ periodically
			  ○ incidentally
				Presentation	• Multimedia eq.	Laboratory
						
						Field
							M

7.4	TTX Exercise	15	• Execution of CBRNE response - under experts supervision	Presentation	• Multimedia eq. • CBRNE security documents (evacuation, response, I&N)	Classroom	M, S

Unit 8: Informing and notifying

Description:

This unit emphasize importance of proper information management about risk, possibly dangerous situations and also information flow during and after CBRNE attack or incident. It describes internal and external information sharing procedures.

Knowledge gained:

- Importance of early and precise information flow
- People to be informed during CBRNE attack or accident

Skills gained:

- To know which information are relevant
- To inform or notify relevant people about the situation during CBRNE attack or incident

Task no	Task no	Task no	Task no	Type of interaction	Equipment needed	Place of training	Target group
8.1	Basics of I&N	10	• Definitions and differences between informing and notifying • Means of communication • Internal I&N lines	Presentation	• Multimedia eq.	Classroom	T
8.2	Organization od of I&N system	15	• Definitions and differences between informing and notifying • Means of communication • Internal I&N lines • External I&N lines • Equipment recommendations	Presentation	• Multimedia eq.	Classroom	M, S

8.3	Information of interest	20	• Threatening Information Form	Presentation	• Multimedia eq.	Classroom	

Unit 9: General procedures

Description:

This unit provides information about recommended procedures presented in the Handbook. Consists of several sets of topics relevant to each target group.

Attention: Procedures recommended in the Handbook must be verified before implementation for compatibility with local law

Knowledge gained:

- Knowledge how to act in case of CBRNE attack or incident

Skills gained:

- To know what is expected from a worker from each target group
- To act accordingly to relevant procedure

Task no	Task name	Time [min]	Content	Type of interaction	Equipment needed	Place of training	Target group
9.1	General procedures	30	• Description of relevant procedures: ○ Searching methodology ○ 1,2,3 + ○ Methane ○ Shelter in place ○ Initial decontamination ○ Remove, remove, remove ○ Cleaning surface ○ Left item – informing only ○ Infected person	Presentation	• Multimedia eq.	Classroom	TS

9.2	General procedures	60	• Description of relevant procedures: ○ Searching methodology ○ 1,2,3 + ○ Methane ○ Shelter in place ○ Initial decontamination ○ Remove, remove, remove ○ Food court (more careful observation) ○ CBRNE bomb planting information ○ Bomb threat (dirty bomb) ○ Left item ○ Parcels/ letters ○ Infected person ○ Ventilation system ○ UAV ○ Vehicle ○ Technical installations ○ External threats	Presentation	• Multimedia eq.	Classroom	S
9.3	General procedures	20	• Description of relevant procedures: ○ 1,2,3 + ○ Methane ○ Initial decontamination ○ Remove, remove, remove ○ Food court (basic information, more detailed during Food Safety Best Practices training) ○ Left item	Presentation	• Multimedia eq.	Classroom	T

			○ Infected person ○ Ventilation system ○ Technical installations				
9.4	General procedures	60	• Description of relevant procedures: ○ Searching methodology ○ 1,2,3 + ○ Methane ○ Shelter in place ○ Initial decontamination ○ Remove, remove, remove ○ Cleaning surfaces ○ Tenants procedures ○ Food court (more careful observation) ○ CBRNE bomb planting information ○ Bomb threat (dirty bomb) ○ Left item ○ Parcels/ letters ○ Infected person ○ Ventilation system ○ UAV ○ Vehicle ○ Technical installations ○ External threats	Presentation	• Multimedia eq.	Classroom	M
9.5	Procedures	20	• Practical use of information gained: ○ Left item	Practical exercise /TTX	• Radio communicator / mobile • Luggage • Printed procedure	Field – (tenants place under reconstruction or	All

						before working hours)	
9.6	Procedures	20	• Practical use of information gained: ○ Remove x 3 and initial decontamination	Practical exercise	• Radio communicator / mobile • Clothes for change • Bottles with water • Screen / shield	Field – (tenants place under reconstruction or before working hours)	All
9.7	Procedures	20	• Practical use of information gained: ○ Methane	Practical exercise	• Radio communicator / mobile • Printed Methane procedure • Photo or banner with the situation	Field – SM corridor / parking	All
9.8	Procedures	20	• Practical use of information gained: ○ 1,2,3+	Practical exercise	• Radio communicator / mobile • Printed procedure • 3 extras • Chemical wounds	Field – (tenants place under reconstruction or before working hours)	All
9.9	Procedures	20	• Practical use of information gained: ○ Searching methodology	Practical exercise	• Radio communicator / mobile • Printed procedure • Backpack with an imitation of bomb	Field – tenant's venue / parking	All

Unit 10: Tenants procedures

Description:

This unit is dedicated to procedures relevant to tenants. It includes information about general security recommendations with specific security aspects related to CBRNE issues. Special attention is put on Shelter in place procedure which is expected to be organized mainly by tenants.

Knowledge gained:

- Methods of space and access management of the venue management
- Actions to be done during and after CBRNE attack or incident

Skills gained:

- Space and access management
- First response actions during CBRNE incident
- Organization of a shelter in a venue

Task no	Task name	Time [min]	Content	Type of interaction	Equipment needed	Place of training	Target group
10.1	Tenants procedures	20	• Presentation and discussion about tenants procedures: ○ Store space control ○ Access control ○ Employee training (evacuation plan, routes of exit, first aid) ○ Emergency response ○ Post evacuation actions ○ Shelter in place	Presentation	• Multimedia eq.	Classroom	T

10.2	Shelter in place	15	• Practical exercise of shelter in place during CBRNE agent release	Practical exercise	• Radio communicator / mobile • Printed procedure • Sticky tape • Towels, clothes • Gloves • Bottles with water • Food and drinks • Paper tissues • Simulation of gas emission (ie. smoke generator)	Field – tenant's venue	T

Unit 11: Evacuation

Description:

Evacuation is the most important action during a CBRNE attack or incident. This unit describes basics, rules, phases, actions of evacuation. Emphasize was put on differences between evacuation during fire or attack and evacuation during CBRNE agent release.

Knowledge gained:

- Role of fast and proper evacuation
- Phases of evacuation
- Restrictions of CBRNE evacuation
- Task and responsibilities during CBRNE evacuation
- Requirements for final decon organized by FF or other dedicated services

Skills gained:

- To know where to evacuate and by which exit in different scenarios
- When and how to shelter in place
- Trainee responsibilities during CBRNE evacuation

Task no	Task name	Time [min]	Content	Type of interaction	Equipment needed	Place of training	Target group
11.1	Importance of evacuation	10	• Effects of early and proper evacuation (low exposure, less severe health effects, lower number of victims, reduced spread of contamination) • Principles of CBRNE evacuation	Presentation	• Multimedia eq.	Classroom	All

11.2	Evacuation plan	10	• Why CBRNE evacuation is different (unseen threat, optional exits, optional evacuation destinations, post evacuation actions) • Roles during evacuation • Main topics included in evacuation plan • Organization of evacuation	Presentation	• Multimedia eq.	Classroom	S, M
11.3	Phases of evacuation	15	• Decision: evacuation vs invacuation vs sheltering in place • Description of three phases of evacuation • General description of actions during each phase	Presentation	• Multimedia eq.	Classroom	All
11.4	Phase II, Stage 1: Evacuation from premisses	10	• Actions and responsibilities during evacuation from premisses	Practical exercise	• Means of communication • Printed procedure	Field – tenant's venue	All
11.5	Phase II, Stage II: Evacuation by emergency routes	10	• Actions and responsibilities during evacuation from premisses • Roles and responsibilities during this stage	Practical exercise	• Means of communication • Printed procedure	Field – corridors	All
11.6	Phase II, Stage III: Moving to assembly points	10	• Actions and responsibilities during moving to assembly points • Roles and responsibilities during this stage	Practical exercise	• Means of communication • Printed procedure	Field – assembly points outside venue	All

11.7	Phase III.	20	• Locations for assembly points • Organization of AP • Action to be taken (decon, Rx3, I&N …) • Reducing contamination spread • Crowd management • Cooperation with dedicated services	Presentation	• Multimedia eq.	Classroom	S, M
11.8	Phase III.	20	• Organization and management of AP	Practical exercise	• Means of communication • Speaking tube • Eq for Rx • 3 • Eq. for I. decon • markers	Field – assembly points outside venue	S, M
11.9	Decontamination	20	• Presentation of wet decontamination process	Practical exercise	• Decon tent • Decon area • Collection bags • Specialized decon team	Field- MICR	M
11.10	Evacuation eq.	20	• Familiarization with equipment helpful during evacuation: ○ command and control escape case ○ evacuation grab bag	• Presentation / practical use • C&C escape case • Grab bag	• Multimedia eq.	Classroom	S, M

11.11	Equipment useful during post evacuation phase	20	• Practical use of equipment:
			  ○ medical rescue bag
			  ○ initial decontamination kit
			• Decon equipment of opportunity:
			  ○ bottles with water or drinks,
			  ○ paper tissues, towels, clothes
				• Presentation / practical use
				• medical rescue bag
				• initial decontamination kit
				• bottles with water, tissues, towels
					• Multimedia eq.	Classroom	S, M

6. RESOURCES

- Handbook for preventing and responding to the CBRNE threats in shopping malls
- ….. sources used for presentations