eNOTICE
European Network Of CBRN TraIning Centres

D4.13 eNOTICE Plan to pool resources and optimise investments for increased CBRN Training Capacity

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Dissemination level

PU	Unrestricted PUBLIC Access – EU project	**X**
PP	Project Private, restricted to other programme participants (including the Commission Services) – EU project	
RE	RESTRICTED, Restricted to a group specified by the consortium (including the Commission Services) – EU project	
CO	Confidential, only for members of the consortium (including the Commission Services) – EU project	

Document Information

Grant Agreement n°	**740521**
Project Title	European Network of CBRN Training Centers
Project Acronym	eNOTICE
Project Coordinator	Université catholique de Louvain (UCL)
Document Responsible Partner	UNITOV
Document Number	D4.13
Document Title	D4.13 eNOTICE Plan to pool resources and optimise investments for increased CBRN Training Capacity
Dissemination Level	Public
Contractual Date of Delivery	April 30, 2023

Partners involved in the Document

N°	Participant organisation name (short name)	Check if involved
1	Université catholique de Louvain (UCL)	X
2	Campus Vesta APB (VESTA)	X
3	Fire and Rescue Service of Seine et Marne (SDIS77)	
4	Association pour la recherche et le développement des méthodes et processus industriels (ARMINES)	
5	Fire Department Dortmund (FDDO)	
6	Safety Innovation Center (SIC)	X
7	Joint CBRN Defence Centre of Excellence Vyškov (JCBRND COE)	X
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Executive Summary

This document is the final report for eNOTICE Work Package 4 on integration, optimisation and joint activities. This report falls under Task 4.4: *Plan to pool resources and optimise investments for increased CBRN Training Capacity*.

This report aims at evaluating the methodology and findings elaborated in Work Package 2 (*Framework for a sustainable European CBRN TC network*), recommendations and conclusions from other deliverables under Work Package 4 (*Integration, optimisation and joint activities*) and recent results from Progress Reports and strategic analyses of the Joint Activities conducted in Work Package 5 (*Project management and quality monitoring*). The goal is to implement best practices for continued sustainability of the eNOTICE network by assessing the framework which has been developed throughout the ongoing project and underline a strategic method for the optimisation of resource pooling to increase CBRN training capacities and enhance EU Member States' preparedness against emerging threats.

The objectives of this report will be attained through the elaboration of the below correlated steps:

- Desk study on best practices in pooling and sharing resources, its relevance in the CBRN defence sector, and its application to the sustainability of the eNOTICE network.
- Analytical assessment of the needs and goals of the existing eNOTICE network through an evaluation of the discussions, observations, and recommendations deliberated throughout:
    - Policy Meetings
    - Progress Reports
    - Consortium questionnaires & SWOT analyses
    - Lessons learnt from the past Joint Activities
- Examination of the critical elements necessary for the continued development of a sustainable network, as previously deliberated in the eNOTICE deliverable D2.5 (*Framework and Sustainability plan for the European CBRN Training Centre network*) and its application to a resource pooling and investments framework.

The above-mentioned methodology will provide the basis for the application of a sustainable framework for the optimisation of investments and pooling of resources in the continuation of the eNOTICE network.

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Nomenclature

CBRN	Chemical, Biological, Radiological, Nuclear
CNBOP-PIB	Scientific and Research Centre for Fire Protection – National Research Institute
DoA	Description of Action
ECC	eNOTICE Community Centre
EDA	European Defence Agency
eNOTICE	European Network of CBRN training centres
EU DG ECHO	European Union Directorate-General for European Civil Protection and Humanitarian Aid Operations
FDDO	Fire Department of the City of Dortmund
JA	Joint Activity
JCBRND COE	Joint CBRN Defence Centre of Excellence
MELODY	A Harmonised CBRN Training Curriculum for First Responders and Medical Staff
NATO	North Atlantic Treaty Organization
P&S	Pooling and Sharing
PROACTIVE	Preparedness against CBRNE threats through common approaches between security practitioners and the vulnerable civil society
R&D&I	Research & Development & Innovation
SME	Small and Medium Enterprise
SOP	Standard Operating Procedures
SWOT	Strengths, Weaknesses, Opportunities, Threats
TC	Training Centre
WSU	War Studies University

1 Introduction

1.1 eNOTICE scope and objectives

The objective of the eNOTICE project – European Network of CBRN Training Centres - is to build a dynamic, functional, and sustainable European network of CBRN Training Centres, testing and demonstration sites (CBRN TC), aiming at enhanced capacity building in training and users-driven innovation and research, based on well-identified needs.

eNOTICE seeks to improve European preparedness, resilience, and incident response to CBRN attacks and emerging threats through close multi- (stakeholders) and single-discipline (practitioners) interactions. Considering the variety of disciplines involved in managing CBRN risks, collaboration has always been quite challenging. CBRN TC can act as the perfect operational intermediary between all civilian and military CBRN actors, EU relevant bodies and policymakers, and thus serve as the best cradle for expansion of a CBRN network of professionals.

To set up such a network that is both efficient and meets the needs of different security actors, several lines of action will be followed within the five-year timeframe of eNOTICE in order to develop a network that will be viable, attractive as well as sustainable.

eNOTICE relates to the 'SEC-21–GM-2016-2017: Pan European Networks of practitioners and other actors in the field of security'. Of the four distinct categories of practitioners SEC-21-GM aims at, this project addresses the need for a network for '*entities from around Europe that manage demonstration and testing sites, training facilities, including simulators or serious gaming platforms in the area of CBRN and for first responders or civil protection practitioners*'[1].

The work program proposes three lines of actions: 1) establish and maintain a roster of capabilities and facilities, 2) organise the best way to share expertise, and 3) plan to pool and share resources with a view to optimise investments.

These lines will serve as a baseline for the project (see Figure 1) and will be complemented by a range of activities aiming at:

[1] European Commission. 24 April 2017. *Horizon 2020 Work Programme 2016-2017: 14. Secure Societies - Protecting freedom and security of Europe and its citizens*. http://ec.europa.eu/research/participants/data/ref/h2020/wp/2016_2017/main/h2020-wp1617-security_en.pdf

1) preparing a **structural, sustainable technical platform** to enable the partners to support the proposed actions, hence, to provide a solid basis to expand to any other relevant activity;

2) a well-informed, sound, conceptual based **sustainability plan** for the platform, considering the profile, needs and expectations of the targeted members, as well as an appropriate strategy to overcome existing barriers and difficulties in creating a CBRN Training Centres' network;

3) a **mix of complementary activities** to strengthen the effect of the three proposed lines of action and to maximise opportunities provided and created by the CBRN platform.

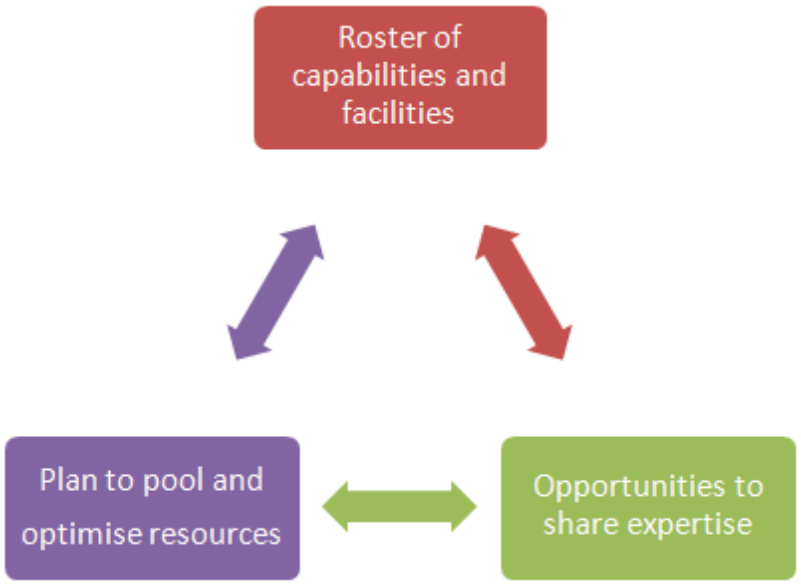

Figure 1 Three lines of actions in eNOTICE (eNOTICE DoA 2016)

The three lines of actions are covered by the eNOTICE Objectives and Sub-objectives. A summary overview is included in the first Progress report (p. 9), as well as an overview of the mix of eNOTICE activities in these three lines of action (p. 8).

1.2 eNOTICE Project reports' scope, objectives and methodology

1.2.1 Scope

This report relates to Task 4.4: *Plan to pool resources and optimise investments for increased CBRN Training Capacity*. The objectives of this report are to evaluate effective approaches for the optimisation of investments and pooling of resources to enhance CBRN training capacities in Europe through a sustainable eNOTICE network. The aim is to analyse the current framework developed throughout the eNOTICE project, understand the needs and objectives of the network stakeholders and partners, and establish a sustainable plan for the pooling of resources in areas such as: training capabilities and harmonisation of procedures, increased funding and knowledge sharing of CBRN research and technological innovation, and enhanced practitioner and decision makers' preparedness against emerging CBRN threats in Europe.

Structure of D4.13

This deliverable is structured in the following manner:

- Chapter 1 introduces the aims of the eNOTICE project and the objectives of Task 4.4 which is elaborated throughout this document.
- Chapter 2 provides a theoretical framework, demonstrating best practices for the sustainability of the European CBRN training network through systematic resource pooling and optimisation of potential investments.
- Chapter 3 provides a deeper understanding of the resource pooling mechanism applied to the eNOTICE network. This is achieved through an in-depth review of the project's activities and achievements over the past 6 years, as they relate to the efficient pooling of resources and optimisation of invested project funds for research, training, and development in the European CBRN defence sector. This chapter also provides a collection of the needs, objectives, and vision for future participation in the network by gathering input from the current consortium partners of project eNOTICE.
- Chapter 4 highlights the main elements previously addressed in deliverable D2.5, *Framework and Sustainability plan for the eNOTICE network*, and outlines critical themes and necessary areas of development to achieve an effective network structure, including pooling member resources and organising a beneficial investment paradigm.

- Chapter 5 discusses conclusions based on the previous chapter and offers possible next steps for network management and organisation moving forward.

1.2.2 Links to other tasks

The work in this report is directly linked to the research, evaluation and discussions put forth in previous deliverables of the eNOTICE project. Specifically, the goals of Task 4.4 and this related document are closely connected with the work which was conducted in D2.5 to develop a sustainability framework and plan for the continuation of the network. This plan, rooted in sound theoretical literature on methodological approaches to network organisation, provided the strategic design of a sustainable network aimed at promoting multidisciplinary international collaboration by connecting European CBRN Training Centres (TC) with Research, Development & Innovation (R&D&I) practitioners and businesses dealing with all operations within the CBRN preparedness, response, and recovery phases.

The work of D4.13 also significantly relates to the other deliverables of Work Package 2, whose overall objective was to develop the framework for a sustainable European CBRN TC network. In detail those related deliverables include:

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- D2.1 Catalogue of CBRN training centres, testing and demonstration sites
- D2.2 CBRN Training Capacity quality label
- D2.3 Mapping and needs-and-gap analysis of the CBRN stakeholders
- D2.4 Report on Key Performance Indicators for a successful CBRN network
- D2.5 Framework and Sustainability plan for the European CBRN Training Centre network

Each of these deliverables has contributed to laying the foundation for the eNOTICE network, establishing the groundwork for a successful governance structure, quality control system and communication plan which directly influence the functionality of a resource pooling and investments mechanism to be outlined in this deliverable, D4.13.

As a consequence of the network's strategic development, the eNOTICE Community Centre (ECC) was established, providing the public with information about project news, offering an outlet for discussion via an online members forum, and publicising network events to members on a privately shared eNOTICE calendar. The functionality of the ECC provides an integral

example of a structured system for pooling resources and providing opportunity for knowledge to be shared for the benefit of network members and subsequent training outcomes.

Recent research and results of Work Package 4, specifically deliverables D4.11 and D4.12 (*eNOTICE Recommendations for CBRN R&D and CBRN policies. Versions 4 & 5*) present important data to consider in the evaluation of current members' satisfaction with the network and first-hand recommendations to improve network investments and provide effective resources and opportunities for both current and future members. The discussions organised within the framework of the eNOTICE Policy Meetings allow for a deeper understanding of the needs of TCs and their ability to interact with and profit from a network which includes funding, resources, and knowledge appropriation from R&D&I actors involved in or seeking involvement in the CBRN world.

Similarly, the Progress Reports issued within the framework of Work Package 5, provide in-depth analysis of the current state of the network's structure and operational efficiency, evidence of successful resource pooling activities among members, and offer an opportunity for evaluation of the cost-effectiveness and practicality of resource pooling through lessons learnt from past eNOTICE Joint Activities.

1.2.3 Methodological approach of this report

The first section (**Chapter 2**) of this document is structured as a collection and analysis of the essential literature on the concept of pooling and sharing resources and its relevant application in the EU CBRN Defence sector through a sustainable eNOTICE network. The purpose of this collection of information is to identify the major points of interest and best practices in the development of a sustainable framework for increasing European CBRN training capacities through the gathering and sharing of resources, facilities, procedures, knowledge, research, outreach, innovation, etc. The outcomes and achievements of the present eNOTICE network have already contributed to the effective pooling and sharing of resources throughout the existing project and provide a basis for the framework which will enable the sustainable continuation and implementation of additional practices for increased resource capability and training capacity.

The second section (**Chapter 3**) of this document provides an outline of the framework for pooling resources which has been applied to eNOTICE during the project's development. It addresses the six pillars which establish the organisational structure of the resources and capabilities provided under the eNOTICE network, namely (1) Catalogue of CBRN TCs, (2)

Capacity Label, (3) Newsletter, (4) List of EU projects & potential collaboration opportunities, (5) Joint Activities, and (6) eNOTICE website. In this regard, Chapter 3 demonstrates the current capabilities for pooling resources and optimising investments among the network members, exhibiting effective methods for the sustainability of this network in the long-term, and providing opportunity for reflection on network shortcomings and member needs through detailed input and observations from the various Progress Reports, Policy Meetings, SWOT assessments and Joint Activities.

Chapter 4 discusses the application of a resource pooling mechanism applied to a sustainability plan. This chapter covers suggestions and modifications to this plan, originally proposed in deliverable D2.5, and specifically focused on the organisational and financial structure of the eNOTICE network. This chapter offers a retrospective analysis of the main elements deliberated in D2.5, to underscore the aspects which continue to be relevant for increasing the potential to pool resources, manage funding, and continue investing in all areas of CBRN training, research, and development.

The final section of this report, **Chapter 5**, provides a strategic evaluation of the critical findings from the abovementioned chapters, with the aim of developing a theoretical and practical plan for the continued successful operations and increased training capacity of the eNOTICE network.

2 Theoretical Framework: Methods for pooling & sharing resources to invest in a sustainable European CBRN TC Network

2.1 Pooling & Sharing Resources in the Public Security and Defence Sector

The term "**resource pooling**", refers to the process of **grouping together resources** with the goal of **maximising operational and financial advantages** by **improving efficiency and decreasing expenses**.[2] A network of pooled resources involves combining the resources of two or more organisations into one single entity, with the aim of increasing harmonisation and productivity. The goal of resource pooling in the public security and defence sector is to ensure resilience and to address political and economic complexities by providing nations with access to previously unavailable resources. This is ultimately achieved through **strategic allocation of resources**.

The concept of resource pooling and sharing (P&S) has been widely addressed in recent years by both NATO and the EU, as a priority initiative to maximise organisation and management of trans-national best practices, expertise, equipment, technology, etc., which continue to be a growing necessity to enhance public security and defence. Within the EU, P&S refers to the act or process of combining, merging, mixing, and/or sharing resources among Member States to enhance each other's capabilities, knowledge and preparedness.[3] The goal for the CBRN defence sector is to increase efficiency of use and allocation of resources, decrease training and operational costs, and maximise financial investments made by national authorities for administrative and logistic areas such as personnel, equipment, services, etc.[4] One example of the efforts to pool resources and optimise investments throughout Europe is the establishment of the European Defence Agency (EDA). The EDA sponsors numerous P&S initiatives at the EU level, including the sharing of transport and aircraft fleets, defence research, training programmes, and military communication satellites.[5] Europe's collective investment in P&S efforts, demonstrates the significance and relevance of initiatives such as a CBRN TC network

[2] W. Bruce Weinrod. August 2014. *Pooling and Sharing: The Effort to Enhance Allied Defense Capabilities*. American Enterprise Institute for Public Policy Research. https://www.aei.org/research-products/report/pooling-and-sharing-the-effort-to-enhance-allied-defense-capabilities/

[3] European Defence Agency. 2013. *EDA's Pooling & Sharing*. https://eda.europa.eu/docs/default-source/eda-factsheets/final-p-s_30012013_factsheet_cs5_gris

[4] Bruce Weinrod. *Pooling and Sharing: The Effort to Enhance Allied Defense Capabilities*.

[5] Ibid.

to maximise security and defence training, standardise preparedness, and harmonise response capabilities.

2.2 Resource Pooling & Optimising Investments in a European CBRN TC Network

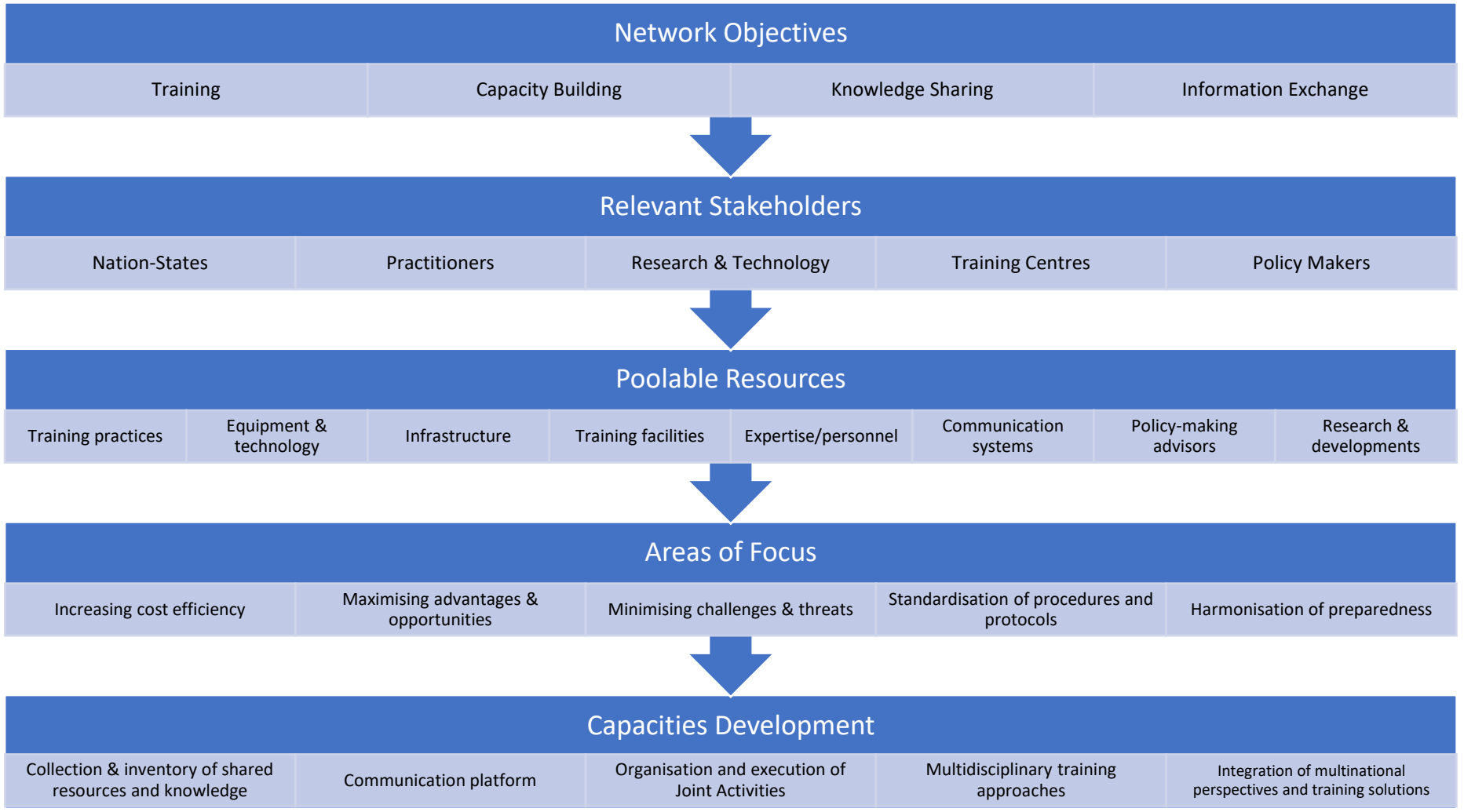
Preparedness, response, and resilience to emerging CBRN threats and the consequences of these events is a global concern. In many cases, CBRN incidents and their aftermaths transcend geographical boundaries, making it vital for closer cooperation among nation-states in the preparedness, response, and recovery phases of an emergency. Cooperation among EU Member States aids in increasing the harmonisation and standardisation of preparedness and response capabilities at the local, regional, national, and even global levels. This cooperation can be achieved through a greater understanding of CBRN risks and establishing collective methods to reduce threats and potential damages from these events. Cooperation and understanding at this level can be attained through a CBRN TC network through which individual resources and capabilities are pooled for the benefit of all network members.

In this capacity, a network functions as an organisational setting whereby diverse stakeholders can cooperate together to achieve collective interests and common goals. The establishment of a CBRN TC network falls in line with the aims and objectives outlined in the European Commission's 2010-2015 "Action Plan to Enhance Preparedness Against Chemical, Biological, Radiological, and Nuclear Security Risks" which called for increased EU cooperation through harmonised training activities and exercises to increase response coordination, resilience, and preparedness.[6]

With this in mind, it is important to examine how resource pooling, when applied to a CBRN TC Network, can contribute to the goals of the EU CBRN Action Plan. A generalised framework will provide the basis for developing the organisational and financial structure which will enable a sustainable network to operate within Europe. The below table provides a detailed mapping of the CBRN TC network's objectives, stakeholders, resources, and other important elements and potential tools for efficient resource pooling:

[6] European Commission. October 2017. *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Action Plan to enhance preparedness against chemical, biological, radiological and nuclear security risks*. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2017:0610:FIN

Table 1 Map of Resource Pooling Framework



Further discussion on the critical elements of a resource pooling framework will be outlined in the succeeding Chapter 3.

2.3 Network Sustainability

The concept of **sustainability** is closely linked to the **time** parameter. Sustainability can be defined as the ability to continue an activity, ensuring both its quality and durability, over an extended period of time. This idea of creating a **durable network** was deeply investigated in deliverable D2.5 (*Framework and Sustainability plan for the European CBRN Training Centre network)*. While conducting the research aimed at the development of a sustainable network framework, it was concluded that the concept of sustainability can also be viewed as a **human-driven process**, by which human actions and activities are seen to have a direct impact on the **economic, social, and environmental** dimensions of society.[7] Considering this notion, a sustainability framework must be developed in such a way that does not voluntarily or purposefully cause harm to any aspect of society covered under these three dimensions. As such, this means that the goods, products, services, etc. of a network should be designed, organised, and/or manufactured in a manner which **positively contributes** to these three pillars of social function.[8] Additionally, much of modern society, such as businesses, education, health care, and security, rely heavily on communication systems. Therefore, a sustainable network framework cannot function completely without the inclusion and effective implementation of a communication structure.

Within the context of a European CBRN TC network, the available products and services are pooled and shared together with the aim of improving training capacities and enhancing public security. The following sections will analyse the elements of the sustainability framework and its application toward a resource pooling plan for the expansion of related goods and services within Europe over a long timeframe. The sustainability framework, in this context, will aid in building a durable resource pooling mechanism and in supporting the goal of enhancing CBRN defence through a **multidisciplinary international community of stakeholders.**

2.4 Sustainability Planning Approach

The sustainability plan is a **roadmap** for achieving long-term goals and which documents **strategies** to continue **successful programs, activities, and partnerships**.

[7] eNOTICE D2.5 - Framework and Sustainability plan for the European CBRN Training Centre network
[8] Neil K. Dawe & Kenneth L. Ryan. 2003. *The Faulty Three-Legged-Stool Model of Sustainable Development*. https://conbio.onlinelibrary.wiley.com/doi/abs/10.1046/j.1523-1739.2003.02471.x

As highlighted in deliverable D2.5 (*Framework and Sustainability plan for the European CBRN Training Centre network)*, two main interesting examples of sustainability planning applied to networks were identified. These examples provide general rules to achieve the goal of **self-sustainability**:

- the work performed by the CDC, the U.S. Centers for Disease Control and Prevention, in the framework of the 'Health Community Movement', which can be seen as **a network of networks**.[9] Here, generic principles and practical guidelines for the development of a sustainability plan are provided. A **good communication strategy** is key to sustainability.
- the document "The Dynamics of Sustainability, A primer for Rural Health Organisations"[10] issued by the U.S. Department of Health and Human Services Health Resources and Services Administration. From this report, **four categories of dynamics** appear to be essential to sustainability:
    - The **WHO** dynamic is related primarily to leadership – style, mindset, influence, and relationships, and involves selecting the partners that are necessary to let the program initiative succeed.
    - The **WHAT** dynamic is related to the relevance, practicality and value of the program and the impact of program selection and design on sustainability. The relative "favourability" of this influence is determined by the extent to which programs or activities are aligned with any or all of the following factors: I) community need, II) the partners' ability to address the need over the long-term, III) the real or perceived value created by the program or services.
    - The **WHY** dynamic, i.e., the motivation of working together, represents one of the elements that affects sustainability the most, and therefore has a major long-term impact. A vision may be short- or long-term, broadly or narrowly defined, held by one organisation or leader, or shared among partners, be nebulous or clearly articulated.

[9] Centers for Disease Control and Prevention. *A Sustainability Planning Guide for Healthy Communities*. https://www.cdc.gov/nccdphp/dch/programs/healthycommunitiesprogram/pdf/sustainability_guide.pdf

[10] U.S. Department of Health and Human Services Health Resources and Services Administration. 2012. *The Dynamics of Sustainability: A Primer for Rural Health Organizations*. https://www.ruralhealthinfo.org/assets/1211-4984/dynamics-of-sustainability.pdf

- The **HOW** dynamic refers to the ways in which a plan is put into action, including the strategies employed, the capacity built, and the documentation and communication of impact and value. The logic and desire to build upon assets in the system helps minimise short-term costs and anticipate the need for sustaining resources, for personnel and overhead.

This dynamics approach was also considered for the elaboration of the D2.4 KPI-based framework and is still visible in the final **KPI-list**. These dynamics should be kept into consideration (and adapted to each different case study) when elaborating the sustainability plan of an initiative, be it the establishment of a community or a network.

If the **scope of a security network**, whose creation has been funded by the EU or by other entities, is to survive after the termination of the project (long-term perspective), a **strategy for self-sustainability** must be elaborated during the project and, possibly, it should be **tested and re-evaluated** for the duration of the grant to be able to apply **corrective measures** to guarantee self-sustainability before it is too late.

Based on these principles, in Chapter 4 of deliverable D2.5, an initial proposal for the "eNOTICE Sustainability plan" was presented. During the subsequent project years, the proposal was modified due to the many inputs produced by the project activities themselves, and its most updated version will be presented in the next chapters.

3 Framework for Pooling Resources and Evidence of a Sustainable eNOTICE Network

3.1 Framework for Pooling Resources and Optimising Investments

A network approach to resource pooling places emphasis on utilising the facilities, equipment, finances, knowledge, and experiences of organisations to achieve common goals.[11] Within this approach, each individual organisation profits from interactions with other partner organisations, continuously yielding accomplishments which benefit the network as a whole. This is also known as **resource complementarity**, through which resources are pooled to complement the needs and expectations of network members and end-users.[12] This theory can be applied to the eNOTICE network by dividing the framework into six steps. The first step involves understanding who the relevant stakeholders or actors in a CBRN network are and how they can contribute diversely to the resource pooling mechanism. Second, it is important to evaluate the needs, both separately and collectively, of these stakeholders, to be able to establish the network's objectives. This is followed by identifying the services provided by the selected network stakeholders and creating an inventory of resources which are available to be pooled and shared based on these characteristics. Then the pooling methodology can be developed, by analysing the best methods for resource pooling, through which the pooling mechanism can be implemented for the creation of an overall sustainable network.

[11] D. Jane Bower. 1993. *New Product Development in the Pharmaceutical Industry: Pooling Network Resources*. https://onlinelibrary.wiley.com/doi/10.1111/1540-5885.1050367

[12] Michael Naor et al. 2017. *Civilian-military pooling of health care resources in Haiti: a theory of complementarities perspective*. https://doi.org/10.1080/00207543.2017.1355121

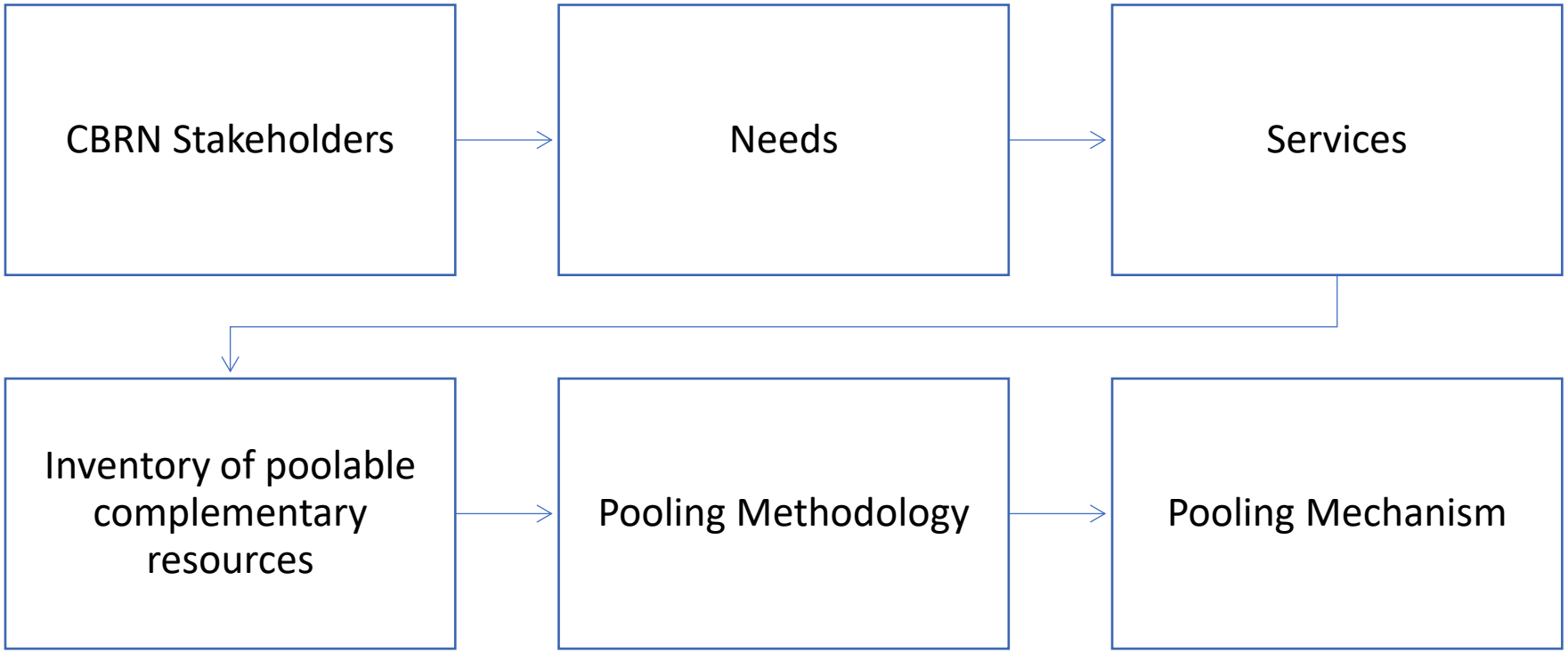


Figure 2 Process for Pooling Network Resources

To further understand this framework, each category must be broken down and defined as it relates to a CBRN TC network, the pooling of resources for this network and ensuring its sustainability through targeted activities and investments.

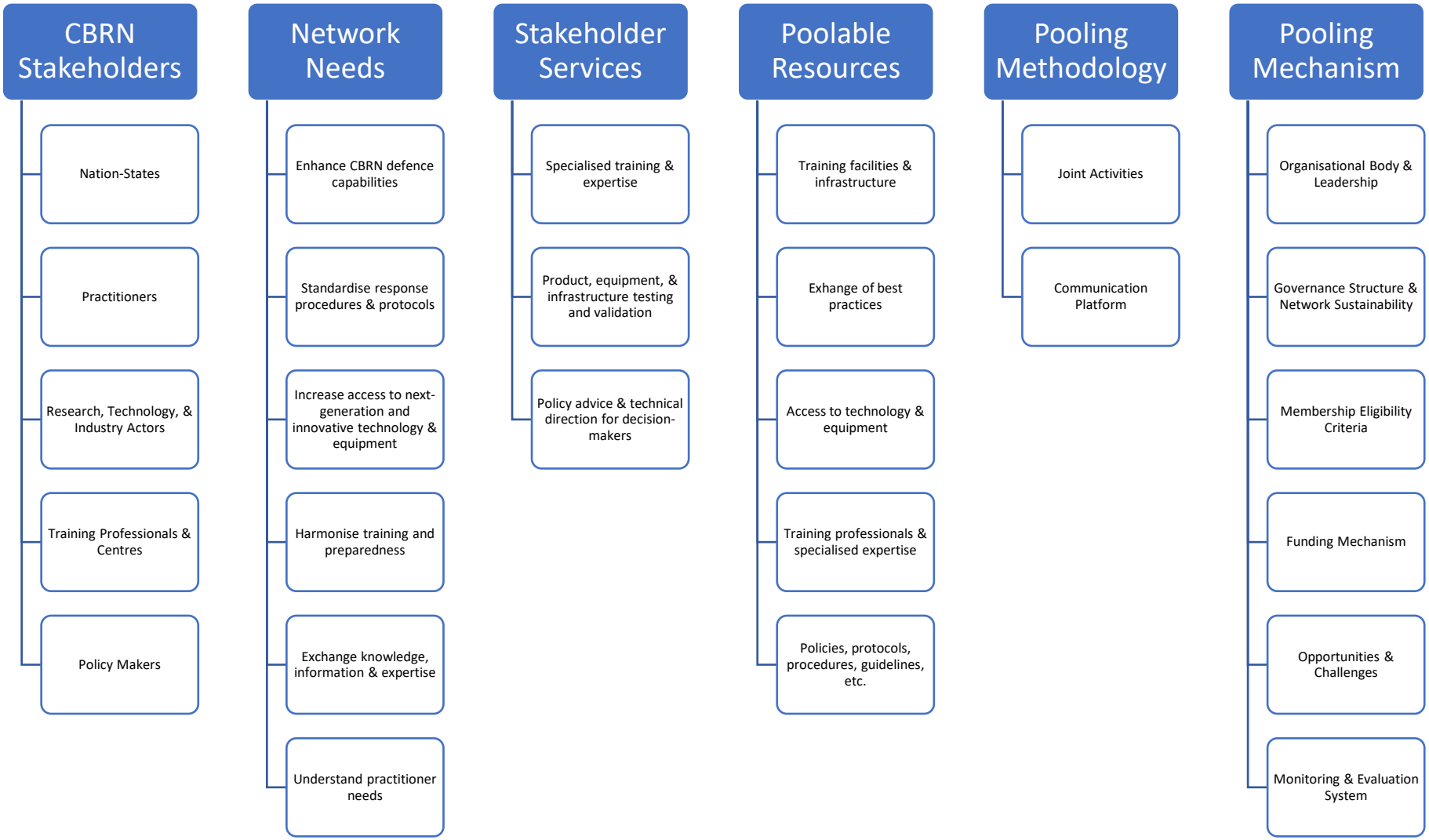


Figure 3 Detailed Illustration of Resource Pooling Framework

The following sections will offer a clearer understanding of these categories and their relationship to each other within this pooling process and highlight how these contribute to the network's overall sustainability.

3.1.1 Definition of CBRN Stakeholders – Needs, Services and Resources

CBRN stakeholders can be defined as main **organisations** which play a key role in CBRN defence through prevention, preparedness, and response. As defined by the eNOTICE project in D2.3 (*Mapping and needs and gaps analysis of the CBRN stakeholders*), different categories of stakeholders have been recognised as crucial actors and beneficiaries in CBRN defence. The main stakeholders that were identified by this mapping include **nation-states, practitioners, research, technology, & industry actors, TCs, and policy makers**.

Figure 4 Diagram of CBRN Stakeholders

Within a CBRN network, each of these actors or stakeholders offers its own expertise, resources, capabilities, and objectives. A thorough understanding of the network as a whole can be acquired by analysing the important elements of each individual component, which, combined together, create the collective identity of the network.

3.1.1.1 Nation-States

The term '**Nation-States**' refers to governing nations which are vital actors in CBRN defence. Each individual state is responsible for establishing preventive and protective measures against potential threats to its nation. In this regard, collective efforts by governments to promote the exchange of information and best practices can lead toward better preparedness and response capabilities. Nation-states, especially EU Member States, are **prime sovereign entities** engaged in world affairs. Nation-states are therefore chief initiators in the efforts to pool resources to increase CBRN training and preparedness. States are a driving force behind the effective functioning of resource pooling within a network, by providing state-of-the-art infrastructure and expertise, government-mandated training centres, and instilling necessary policies for prevention and response. For a European CBRN TC network, nation-states could be represented by including the relative **state departments and national authorities** which deal directly with CBRN training and defence.

3.1.1.2 Practitioners

'**Practitioners**' are the key actors in the emergency response phase of a CBRN incident. Therefore, they are the main stakeholders who receive direct benefit from specialised training activities and multidisciplinary exercises as part of a CBRN network. Similarly, emergency response practitioners are the primary users of CBRN-specific equipment and technological innovation developed specifically for CBRN emergencies. The term 'practitioners' includes a wide range of emergency response personnel, such as **firefighters, search & rescue teams, police (law enforcement), intelligence services, security and defence experts, emergency medical services, civil protection, border guards, customs authorities, explosives specialists, forensic laboratories, communication experts, logistic services** for incident management, and **various specialised services** (e.g., hazmat, water, and waste management, etc.). Each of these actors operates different roles and responsibilities within emergency response operations, requiring excellent coordination, standardisation in procedures, and harmonisation of expertise for a successful joint response in a large-scale emergency situation. Therefore, all the abovementioned entities can be considered as crucial participants in a resource pooling framework, offering diversity in both knowledge and experience.

3.1.1.3 Research, Technology, & Industry Actors

The term "Research, Technology, & Industry" within the CBRN industry refers to representatives of all research and development organisations - **large industries**, small and

medium enterprises (**SMEs**), **academia, private research institutes, and governmental research units**. It includes industries which **design, manufacture, develop and/or sell CBRN-specific equipment**, as well as **academia & research** institutes responsible for the development of new products, innovative technologies and next-generation equipment to ease or facilitate the work of practitioners in emergency response operations. Within a CBRN TC network, research & technology actors aim to provide practitioners with new solutions through demonstrations and product validation exercises. They remain an important factor in contributing to nation-states' preparedness and response capabilities, by providing users with next-generation equipment and innovative technological solutions to respond effectively and efficiently to CBRN threats.

3.1.1.4 Training Professionals / CBRN Training Centres

'**Training professionals**' and '**CBRN Training Centres**' refers to individual personnel and formal organisations with knowledge and experience in CBRN-related training. Training professionals are individuals with diverse professional backgrounds and who possess unique multidisciplinary expertise (including both **military and civilian**) from which they provide specialised training to enhance nation-states' capabilities to respond to CBRN events. TCs and their staff play an **intermediary role** which establishes and fosters the connection between all the other actors within the resource pooling framework. Additionally, CBRN TCs function as **training, testing, and demonstration centres**, offering the necessary infrastructure and resources for the testing of equipment and the training of practitioners from all disciplines in CBRN emergency response.

3.1.1.5 Policy Makers

Within CBRN defence, '**Policy Makers**' are the specific individuals who are responsible for decisions which affect the wellbeing, safety, and security of a population of a specific part (local/regional) or the whole (national) of a governed nation. Policy Makers are typically members of **governmental agencies** with the authority to set the security policy framework by creating strategic plans for organisations or legal entities to follow. Policy Makers also ensure compliance of established rules, regulations, and laws. In CBRN defence, Policy Makers give direction to enable better preparedness and response to CBRN threats and their decisions influence the outcomes of a CBRN emergency event. Policy Makers may also designate the resources allocated by a nation-state for CBRN preparedness and response, by dictating the capabilities of TCs, including their technology, facilities, and funding for activities and

research. In a European CBRN TC network, Policy Makers are the main driving force in developing the necessary **guidelines, regulations and legislations to increase emergency preparedness and training capacities** within the EU nations.

3.1.2 Outline of CBRN Stakeholder Resources and Services Pooled

The elaborated framework which forms a CBRN TC network involves the interaction and integration of the services and capabilities of each stakeholder – states, practitioners, research & technology actors, TCs, and policy makers – and is the driving force of this network. States are a direct beneficiary of the resource pooling efforts of the network and can help to align the interests of all the participating members by **providing funding, infrastructure, and expertise**. Users or practitioners **need continuous access to training opportunities, new cooperation initiatives, and innovative technology**. This motivates them to advocate to states and policy makers to fund and permit new capabilities, technology, etc. Technology suppliers provide an important opportunity for states and practitioners to have access **to technological advancements** to increase knowledge, preparedness, and capabilities on the field, thereby **improving the safety, security, and resilience of the EU Member States**. Participation in the network is also financially advantageous for technology suppliers who have the opportunity to demonstrate, test, and market their products and next-generation equipment to first-hand buyers. Policy makers support the implementation of **best practices in training and response**, and their inclusion in a CBRN TC network enables them to be consistently informed and updated on user needs, technological advances, opportunities for research and international cooperation, etc. which help them **guide the direction** of relevant national policies.

Table 2 List of Services and Resources to be Pooled by CBRN Stakeholders

CBRN Actors/Stakeholders	Resources to be Pooled in a Network
Nation-States	▪ Specialised capabilities ▪ National funding ▪ Government-regulated training centres ▪ Specific infrastructure and facilities ▪ Varied training programs
Practitioners	▪ Diversity in training practices and CBRN emergency response experiences ▪ Feedback on practitioners'' needs ▪ Expert testing and validation of new products/equipment
Research, Technology, & Industry (R&D&I)	▪ Updated versions of trusted equipment & verified technology

	▪ Access to emerging technologies to increase training and response capabilities
Training Professionals / CBRN Training Centres	▪ High level and high quality specialised CBRN education ▪ Diversified training approaches, areas of focus (C, B, R&N), and training capacity ▪ Facilitate exchange of information concerning current practices, technologies and systems for CBRN training ▪ Provide a platform and requisite infrastructure to conduct activities such as tabletop exercises, serious gaming, and technology testing and demonstrations ▪ Provide interdisciplinary networking opportunities
Policy Makers	▪ Implementation of political policy/decisions to improve prevention, preparedness, response, and recovery protocols, guidelines, and legislation. ▪ Legal direction to increase regulations of equipment and technology use, national investment and funding in R&D, etc. ▪ Advocacy for collective European standardisation of training capabilities and protocols, and harmonisation of practices among EU Member States.

3.1.3 Pooling Methodology

A complementary resource pooling methodology is necessary to sustain a CBRN network of actors and the pooling of their services, expertise, capabilities, and resources. The first key instrument in this methodology involves the implementation of **Joint Activities (JA) -** opportunities aimed at enhancing the quality and frequency of interactions and collaboration among stakeholders. The second, a **Communications Platform**, involves a systematic method of communication among the network members to ensure knowledge management and sharing, and to promote network transparency (where security protocols permit) in the CBRN defence and security field.

JAs within a CBRN TC network involve **multicultural and multidisciplinary learning activities**, which facilitate interaction and collaboration among all network members. JAs form the basis for the complementary pooling of resources by fostering **valuable and collective partnerships** among the various types of stakeholders. Through this, JAs help ensure the production, collection and sharing of information and knowledge of mutual interest for all

CBRN actors. There are various manners in which a JA can be organised, depending upon the objectives and needs of the partners. The main overall goal is to fulfil all CBRN actors' needs through the services offered by the network's pooling of resources. The following offers a description of the various type of JAs which can be organised to increase training capabilities through a European CBRN TC network:

1. Physical or virtual training and educational activities in the form of **field exercises, tabletop exercises, demonstrations, or simulations and serious gaming**.
2. **Policy Meetings** to discuss recommendations, requirements, strategies, practices, and/or obtain authorisations, etc.
3. **Workshops** to determine the progress of the network, identify needs, review resources, form new partnerships, etc.

The pooling of resources in a CBRN TC network also benefits from increased and consistent member communication through a **dedicated platform**. As a method for resource pooling, a communication platform connects all the network stakeholders together and serves as a tool for visibility of the network. A network communication platform provides a focused outlet for the exchange of information, creation of partnerships, establishment of agreements, and evaluation of the network's pooling efforts. It is also a mechanism to engage with new and potential partners and members, as well as to disseminate information locally, regionally, nationally, and internationally.

3.1.4 Pooling Mechanism

For a CBRN TC network, the **pooling mechanism** involves the institutional and operational pillars required for the **successful implementation and functioning of the pooling framework**. Understanding the pooling mechanism includes identifying and defining the specifics of the network's **organisational body**, **governance and sustainability**, **eligibility criteria**, **funding mechanism**, **opportunities and challenges**, and **monitoring and evaluation system**. These aspects were thoroughly explored in deliverable D2.5 (*Framework and Sustainability plan for the European CBRN Training Centre network*) and will be discussed further in Chapter 4 of this report.

3.2 Sustainability Framework of eNOTICE

The goal of the eNOTICE network was to create a public-private partnership, through which non-profit TCs (ideally both civilian and military[13]) with regional and/or national funding, could work together with private organisations to maximise communication, research, funding, and technological development for enhanced CBRN training.[14] To obtain this objective, the network was designed based on six main elements which have been continuously developed and maintained throughout the past 6 years (2017-2023) of the project:

1. A **catalogue of TCs** in Europe.
2. A **"Capacity Label"** providing indication on the TC's specific area(s) of focus and training capabilities (i.e., Chemical, Biological, Radiological, and/or Serious Gaming).
3. A public **eNOTICE newsletter** delivering information about network activities to external stakeholders.
4. A list of **EU-funded projects** with similar research objectives, providing potential opportunities for collaboration with the entire network or with individual partners.
5. A list of all past and upcoming **Joint Activities** organised by the network partners.
6. An **eNOTICE website**, divided into two components:
    - Link to the ECC (members only): news, forum, and calendar
    - Public Information: list of consortium members, project publications, catalogues of the TCs and Joint Activities, legal information about the project, and a network registration request form

[13] The ability for military TCs to interact with private organisations is an aspect which will be discussed later in this document.
[14] eNOTICE D4.11 – eNOTICE Recommendations for CBRN R&D and CBRN policies. Version 4 (page 3)

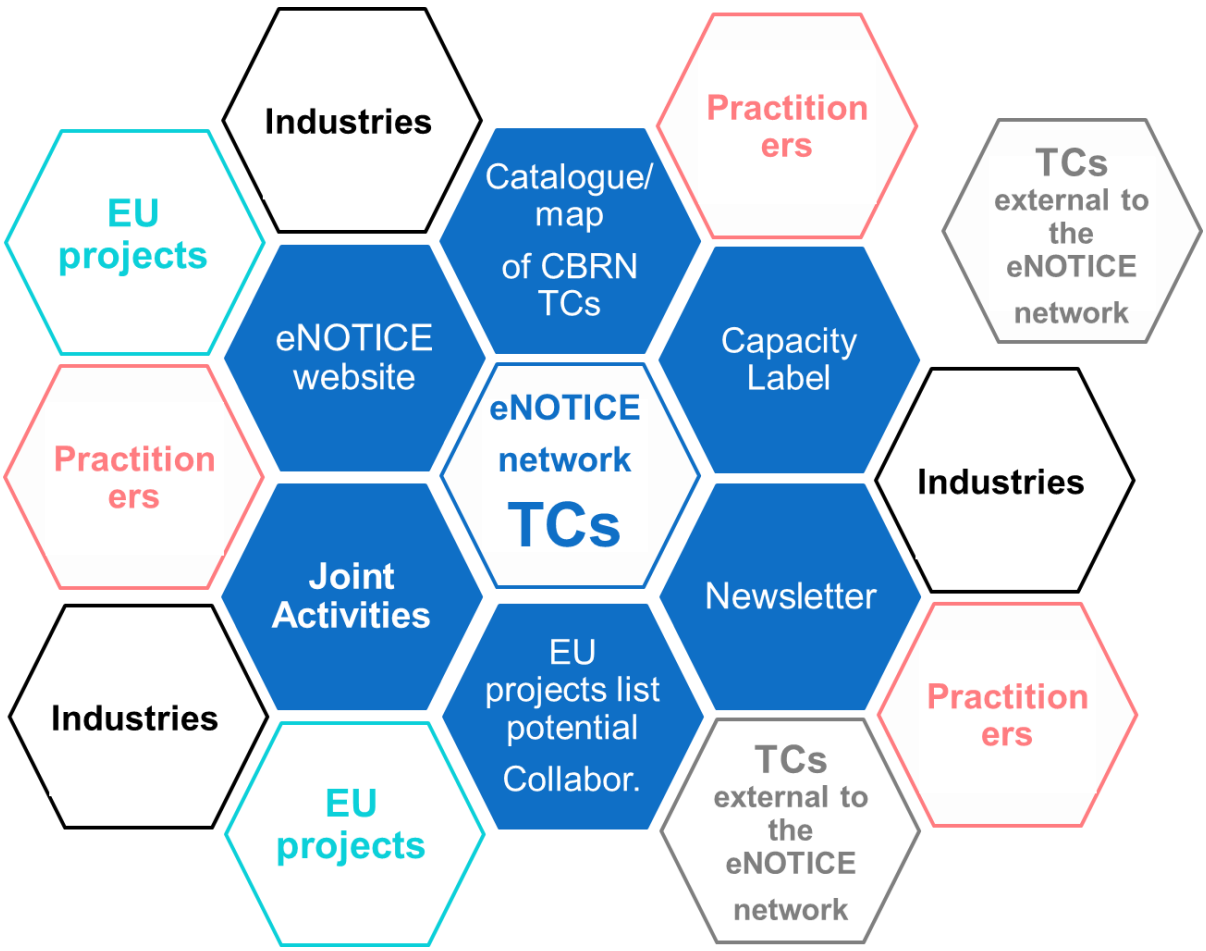


Figure 5 eNOTICE network tools and services to pool resources[15]

As demonstrated by the above image, each of these tools was envisioned and mapped according to the services it provides to a specific target audience or end-user, namely, **practitioners** active in the field, **industries** involved in research and development, **TCs** (both internal and external to the network) and their training staff, and partners of other **EU-funded CBRN projects**.

Within the framework of the three lines of action (see Figure 1) for the eNOTICE network, three areas of focus were selected in the overall plan to pool resources[16]:

1. Collect information on the cost of organising JAs.
2. Create a list to standardise data shared about legal/ethical/security aspects of the JAs.
3. Develop a quality monitoring system of the eNOTICE network.

[15] Daniele Di Giovanni. February 2020. *Pooling Resources*. PowerPoint presented at eNOTICE Joint Activity in Ankara, Turkey.
[16] eNOTICE D5.12 – Progress report 7

These three points underscore the network's focus on ensuring that the resources used by members have been strategically selected, distributed and/or shared among partners, and that the organisation of joint activities and exercises has successfully contributed to effective advances in development, product testing, knowledge acquisition and practitioner training.

3.3 Needs, Objectives and Vision of the eNOTICE Members for Network Sustainability and Resource Pooling

To further evaluate the sustainability of the network and its future capabilities for resource pooling to increase training outcomes, a collection of the current member's needs, objectives, and vision for the eNOTICE network was conducted. These member inputs have been gathered from four main areas developed throughout the project:

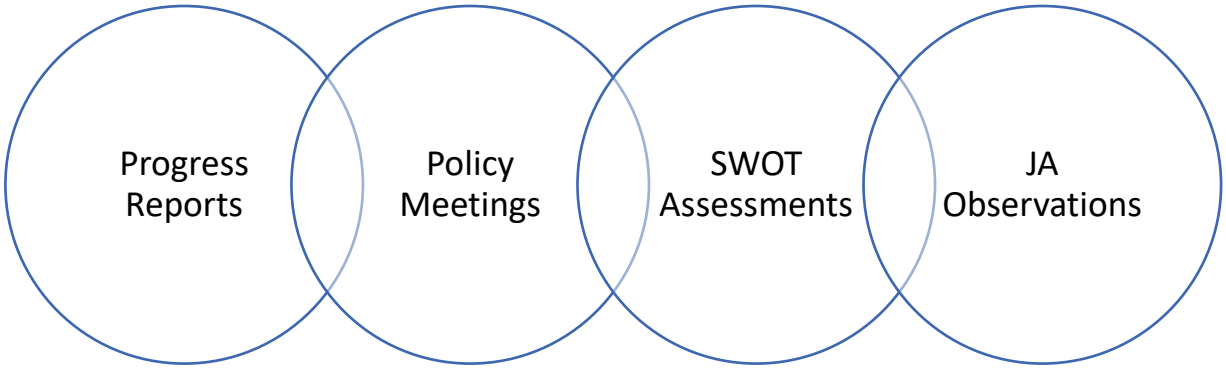


Figure 6 Diagram of Member Input Sources

3.3.1 Progress Reports & Policy Meetings

Beginning with the first meeting on June 20th, 2018, a total of five **Policy Meetings** were held to support the eNOTICE network and foster dialogue among project consortium partners and potential network members (representing R&D&I, TC, practitioner, and policy maker's perspectives). Through these policy meetings, eNOTICE has employed **tangible measures** aimed at the pooling of resources and analysing ways to maintain the sustainability of the network. The main goal of these policy meetings has been to provide members with a **constructive outlet** to express opinions on their TC's needs and objectives, discuss

expectations and requirements for the network, **share knowledge** and investment opportunities, and brainstorm **ideas for future development** and growth.[17]

The significant takeaways from the most recent policy meetings, building upon findings from all previous discussions, have indicated that the **52 current network members** are actively interested in continuing their participation in a sustainable and **autonomously functional eNOTICE network** at the culmination of the project on August 31st, 2023. However, the extent of their participation and willingness to include certain operators (specifically private industries and SMEs), varies according to certain parameters, such as **partner type** (civil or military) and relevant **funding** mechanism (public or private), stakeholder **objectives and capabilities**, and the organisation's **motivation** for participating in the network. For this reason, it has been important to document the results of the policy meetings and their relevance in the network's capacity to continue in a sustainable manner and improve upon its ability to pool resources and optimise investments to increase CBRN training capabilities. The major points of these findings are described in the following tables:

Table 3 Summary of Needs & Concerns of eNOTICE Network Stakeholders[18]

Stakeholder Needs / Interests	Stakeholder Concerns
• **Main priority** is to train public responders • **Access to development and innovation** in infrastructure, training, testing and research • To **follow specific standards** in training and **operating procedures** (local, regional, national, cross-border, EU, NATO, etc.) • A **common training curriculum** which could be used by most TCs (military have more restrictive guidelines) • A **multidisciplinary & inclusive approach** to training • **Versatility** in training scenarios and joint activities	• Public TCs are restricted to acting & training on behalf of **national/regional/local authorities** • Military TCs are especially hesitant to include private industries in the network for **security reasons and operational regulations** • **Time & costs** required to organise logistics and fund training exercises, demonstrations, equipment testing, etc. • **Harmonisation and standardisation** in training • **Inability to share results** • **Technical challenges** in communication, preparing equipment, field conditions, hardware/software issues, etc.

[17] eNOTICE D4.11 – eNOTICE Recommendations for CBRN R&D and CBRN policies. Version 5 (page 8)
[18] eNOTICE D4.11 & D4.12 – eNOTICE Recommendations for CBRN R&D and CBRN policies. Versions 4 & 5 and eNOTICE D5.16 – Progress report 9

• Improved **civil-military** cooperation • **Dissemination** of EU project results • Opportunity for **Virtual Reality** training • **Increase resilience** against new CBRN threats	• **Environmental impact and green procurement** of technology, testing sites, and infrastructure, linked to local or regional compliance regulations, national legislations and TC certification type • Gaps in **preparedness** • **Infrequent participation and communication**

Table 4 Summary of Network Capabilities and Significance for Resource P&S[19]

Network Capabilities	Significance for Resource P&S
• **Collaboration with industry** for infrastructure, training, testing and research is possible (more for private TCs than for public) • **Validation of innovative technologies** by TCs through testing exercises (*but not certification of products*) • Provide **flexibility in context and location** for practitioner training • Accessibility of **expertise and good practices** • **Access to private centres** not bound by national regulations • **Act as mediator** between TCs and industry	• Investments must be **focused on community needs** and therefore be sensible and practical • Some TCs have greater capabilities than others, which is useful when the **facilities, equipment and personnel can be shared** with those in the network who have less resources and training capacity • While many are willing, military TCs are not necessarily able to provide **open access to facilities, equipment and SOPs** for training purposes ; this directly influences the overall interaction between members of the network • Communication between industry and other network members may pose significant challenges to **information security and data processing** (e.g., GDPR) • **Collaboration with international organisations** (e.g., OPCW, WHO, IAEA) and EU offices and departments (e.g., DG HOME & DG ECHO) will help **to enlarge the network and maximise benefits** through increased communication and access to information and resources

[19] eNOTICE D4.11 & D4.12 – eNOTICE Recommendations for CBRN R&D and CBRN policies. Versions 4 & 5 and eNOTICE D5.16 – Progress report 9

3.3.2 SWOT Assessments

Additionally, as previously mentioned, part of the three lines of action for resource pooling involves the quality monitoring of the network for sustainable development. **Quality monitoring** has been executed throughout the project in various methods, including standardisation and harmonisation of the organisational process of JAs through the development of a JA checklist and multiple questionnaires which have been distributed to consortium members with the purpose of gathering an understanding of the project's progress and effectiveness in pooling resources for improved CBRN training, R&D and technological advancement.

Within this quality monitoring process, a **SWOT** (strengths, weaknesses, opportunities, and threats) analysis was conducted as part of 'Progress Report 7' (D5.12) based on questionnaire replies received from a range of partners, each with their own expertise, capacities and objectives for participating in eNOTICE. The results of this analysis provide indication on the **current actions, potential opportunities, and possible threats caused by pooling resources and investing in both human and physical resources** for a European CBRN training network. As such, it is important to evaluate the relevant findings and their relationship to the network's continued sustainability moving forward. From the abovementioned SWOT analysis, the following opinions, ideas and conclusions about the eNOTICE European CBRN TC network have been expressed[20]:

[20] eNOTICE D5.12 – Progress report 7

Table 5 Summary of eNOTICE SWOT Analysis from D5.12

Strengths	Weaknesses	Opportunities	Threats
• Being part of an **international network** • Being able to **exchange information and best practices** • Having **access to policy makers** through the eNOTICE network • Having **access to industry partners** via the eNOTICE network • Providing opportunity for **civil-military cooperation** • Exchange of **scientific research** • **Flexibility** in meeting styles • **Interest and motivation** of TCs to maintain the network and its activities	• Long distance and **necessity to travel** to real-life activities • Lack of **internal communication** • Little **interest in regional issues** • Small number of **platforms for interaction** • **Sustainability** of the network is **not guaranteed**	• To **form synergies** between the network, EU projects and other networks • **International collaboration** through policy makers • Cooperation with other **international organisations** • Increased **civil-military** cooperation • **Focus on TC needs**	• **Pandemic**[21] prohibiting in-person meetings and activities • Insufficient **financial support** • Low member **participation** • **Inability to sustain the network** when the project ends

[21] As originally reported in D5.12, the COVID-19 pandemic was seen as a major threat to network sustainability and continuity because of the restrictions and limitations it placed on in-person meetings and activities within the framework of project eNOTICE. With this in mind, the concept of restrictive circumstances can also be extended to include other major crises, emergencies, conflicts, etc., preventing members from actively participating in network proceedings.

As discussed in the previous chapter, P&S of resources is an integral part of an action plan to increase preparedness and resilience through a sustainable network. P&S is the backdrop through which a European CBRN TC network - regardless of its formality of structure, funding, and decision-making capabilities – is able to generate a meaningful impact in the expansion of capacity-building initiatives.[22] Taking into consideration the theory that the benefits of P&S resources within the CBRN defence and training sector outweigh the disadvantages, it is of strategic importance to analyse a network's perceived 'Weaknesses' and 'Threats' and seek methods to either decrease their impact or resolve them entirely. In regard to the above SWOT analysis of the eNOTICE network, the following ideas could potentially ensure an effective and sustainable continuation of the network:

Table 6 Solutions for Resource P&S based on 'W' Assessment Results

Weaknesses	**Potential Solutions to Increase Resource & Investment Opportunities**
Travel for in-person events & activities	Create a broad range of event and activity types (**fully online or hybrid modality**) to encourage participation and refrain from placing unnecessary financial and time burdens on partners who cannot attend live activities.
Lack of internal communication	Establish a **group mailing list** and **clear internal communication plan** with weekly or monthly updates on things such as**:** • Event information and invitations • Info on other network or project updates and opportunities • Info on recent research articles published by network members • Info on current technological advancements from industry and SMEs This internal communication structure should be unanimously agreed upon by the governing body of the network and subsequently managed by a single individual or small number of operator(s).
Interest focused only on larger scale and/or commonly shared issues	Encourage a **bottom-up approach** to training and policy making by including local and regional issues in the planned events, network discussions, and internal communications plan. Support a primary focus on user/practitioner needs.

[22] European Parliament Directorate-General for External Policies. 2015. *State of play of the implementation of EDA's pooling and sharing initiatives and its impact on the European defence industry*. https://www.europarl.europa.eu/RegData/etudes/STUD/2015/534988/EXPO_STU(2015)534988_EN.pdf

Not enough variety of platforms for interaction	As the network grows larger, create smaller sub-communities (Working Groups) with specific areas of interest and/or research focus. These communities can utilise various outlets of communication and interaction, such as a dedicated group forum and shared drives within the online network platform. Create and develop a user-friendly ECC network application, which provides easy access to network communications and facilitates increased participation and member interactions. *It must also be taken into consideration that any form of communication, and sharing of knowledge and resources must adhere to GDPR and any additionally restrictive national regulations.*
Sustainability is not guaranteed	Design and support **an autonomous and independently strong network**, maintain consistent communication and organisation of frequent events, develop a **sustainable financial and governance structure**, and encourage members to participate actively and continuously to sustain the network over time.

Table 7 Solutions for Resource P&S based on 'T' Assessment Results

Threats	Potential Solutions to Increase Resource & Investment Opportunities
Pandemics and other global health issues preventing in-person participation	As with any organisation, business, or network, consistent participation is key to successful continuation. In the research and development field, the COVID-19 pandemic taught a valuable lesson: *virtual participation is better than no participation at all*. In the event of a global pandemic or some other issue preventing the organisation of live events, then **online** workshops, conferences, meetings, demonstrations, courses, and training sessions should be organised to continue to build upon the work and achievements of the network.
Insufficient financial support	To increase financial viability, several options which could be implemented in the future network include: requiring a **membership fee** from specific member types, encouraging **voluntary financial contributions** from external stakeholders and nation-states who are willing to invest in network activities and output, and permitting **sponsorships** from private TC and industries to market technology developments and assist with funding of network events.

Low member participation	It will ultimately be **up to the members themselves to actively participate** within the network. Participation can be encouraged and fostered through meetings, exercises, activities and the use of various platforms to **gauge interest and offer opportunities to exchange dialogue**.
Inability to sustain the network	If each facet of the network and its related aspects are identified and supported through a **strategic framework, financial structure, and active member participation**, the network will be equipped with the tools to successfully sustain itself over time.

3.3.3 Lessons Learnt from the eNOTICE JAs

Section 3.1.2 discussed the 'Pooling Methodology' based on the complementary resource pooling theory applied to the CBRN defence sector, demonstrating the types of activities which could be useful to sustain a network of actors by pooling their services, expertise, capabilities, and resources. The three types of JAs that were identified for the eNOTICE network were:

1. Training activities – **field exercises, tabletop exercises, or simulations and serious gaming,** and **demonstrations** of equipment, infrastructure, services, etc.
2. **Policy Meetings** to strategise with both internal and external stakeholders on potential resource pooling opportunities and the future sustainability plan.
3. **Workshops** among network members to discuss progress and upcoming events.

Since the start of the eNOTICE project, **16 JAs** have been organised, with **1 upcoming activity** planned before the end of the project on **August 31st, 2023**. These activities have ranged in type and scope, including **multidisciplinary field exercises, tabletop exercises, and serious game simulations**.[23] Several of the JAs were organised to include multiple activities within the same meeting, such as a field exercise and a workshop or policy meeting together. For the last JA within the eNOTICE project for the first time a fair with CBRN defence related industry will be organised on 12 May 2023 to attract companies supporting sustainability efforts. Evaluation of the training activities has been collected into three reports produced in the framework of Work Package 5 (*Project management and quality monitoring*). Many of the lessons learnt from these activities have been based on an **analysis of user needs and gap assessments** made by partner observations. Through these assessments, it has been possible to

[23] eNOTICE Catalogue of Joint Activities, https://www.h2020-enotice.eu/static/ja-catalogue.html

demonstrate the **effectiveness (or lack thereof) of the JAs as a resource pooling method**, by evaluating crucial elements, including:

- Organisational strengths and/or challenges
- Efficiency and advantages of multidisciplinary cooperation
- Achievement of learning outcomes / training objectives from each stakeholder's perspective (i.e., states, practitioners, R&D&I, TCs, and policy makers)
- Cost-effectiveness (and relative financial benefits for all participating members)

The following table offers a summary of the JAs organised during the project and the relevant lessons learnt during these activities:

Table 8 Summary of JAs and Lessons Learnt

JA & Organisers	Location & Date	Exercise Type	Lesson Themes	Main Lessons Learnt (D5.10[24], D5.14[25] & D5.17[26])
Basic Training for Firefighters (SDIS 77)	Gurcy, France 12-14 Dec, 2017	Field Exercise	• Fire • Rescue & Relief • Chemical	• Emphasis needs to be placed on close **civil-military interaction and cooperation**. • A **standardised approach** (civil-mil) for training and exercises could be useful. • It is important to build upon the lessons learned from each activity through **expert evaluations**. • **Collaboration with other EU projects** requires that both projects are on the same level in order to create any benefit from a shared exercise. • All TCs operate differently and under varying circumstances, funding type, etc.; therefore, **harmonisation of organisational**
The activation of the medical chain after a major incident (ARMINES & METU)	Nimes, France 30 Jan – 4 Feb, 2018	Tabletop Exercise	• Medical • Explosive • Radiological	
Joint international field exercise with EU mobile laboratory (UCL)	Brussels, Belgium 19-23 June, 2018	Field Exercise	• Biological	
CBRN Operational Sampling Course (UNITOV)	Rome, Italy 10-11 Oct, 2018	Field Exercise	• Radiological • Explosive	
I-RAPTER Basic Course 2019 (JCBRND COE)	Vyškov, Czech Republic 25 Feb – 1 Mar, 2019	Course including Field Exercise	• Radiological	
Joint Activity in Gurcy (SDIS 77 & ARMINES)	Gurcy, France 22-23 May, 2019	Field Exercise (multidisciplinary)	• Rescue & Relief • Fire	

[24] D5.10 – eNOTICE evaluation report on the preparation/organisation, evaluation and follow up of exercises, combined with tests, validations or demonstration. Report 1.
[25] D5.14 – eNOTICE evaluation report on the preparation/organisation, evaluation and follow up of exercises, combined with tests, validations or demonstration. Report 2.
[26] D5.17 – eNOTICE evaluation report on the preparation/organisation, evaluation and follow up of exercises, combined with tests, validations or demonstration. Report 3.

				procedures and protocols is difficult to obtain. • The eNOTICE network can be useful in attempting to harmonise protocols among nation-states & TCs through the **implementation of standardised methodology and templates**. • **Digital platforms** are potential solutions to make the organisational process easier and more user-friendly.
Joint Activity in the UK (WMP)	Birmingham, UK 11 July, 2019	Tabletop Exercise (multidisciplinary)	• Chemical	
Joint Activity in Dortmund (FDDO & CNBOP-PIB)	Dortmund, Germany 20-24 Sept, 2019	Field Exercise (multidisciplinary) Workshop Policy Meeting	• Chemical • Rescue & Relief	
Joint Activity in Turkey (METU)	Ankara, Turkey 25-28 Feb, 2020	Serious game	• Medical • Biological	
Combined Civil-Military Exercise in Warsaw (WSU & CNBOP-PIB)	Warsaw, Poland 15-18 Nov, 2021	Field Exercise (multidisciplinary	• Radiological • Chemical	• Standardisation and harmonisation are not attainable for every TC but can be **highly encouraged** within the network. • JAs are enhancing civil – military cooperation and interaction as well as NATO – EU cooperation putting the NATO – EU Joint Declarations from 2016, 2018, and 2023 into concrete action. • Recognition must be given of the **significant differences in resources and capacities** needed to organise theoretical activities
Consequence Management After a CBRN Incident (JCBRND COE)	Vyškov, Czech Republic 22-26 Nov, 2021	NATO Course including Syndicate Work (multidisciplinary)	• Radiological • Chemical • Biological • Media	
Joint Activity with PROACTIVE (FDDO)	Dortmund, Germany 7 May, 2022	Field Exercise (multidisciplinary)	• Chemical • Rescue & Relief	
Multidisciplinary Field Exercise in Ranst (VESTA)	Ranst, Belgium 18-21 May, 2022	Field Exercise (multidisciplinary) Policy Meeting	• Fire • Chemical • Rescue & Relief	

				(i.e., tabletop exercises and courses) and full-scale multidisciplinary field exercises. • There are many **technological advances and innovations** which could be utilised to **diversify the types of JAs** organised among network members (e.g., Virtual Reality trainings). • Additional **quality monitoring and evaluation** methods provided to TCs could benefit the overall organisation process and outcomes of the JAs. • **Increased communication and publicity about events** on the eNOTICE website could be a useful way to increase participation, partnerships, and the general effectiveness of resource pooling among members. • Network members should be encouraged to **provide consistent feedback and to open discussions** about observations, findings, failed

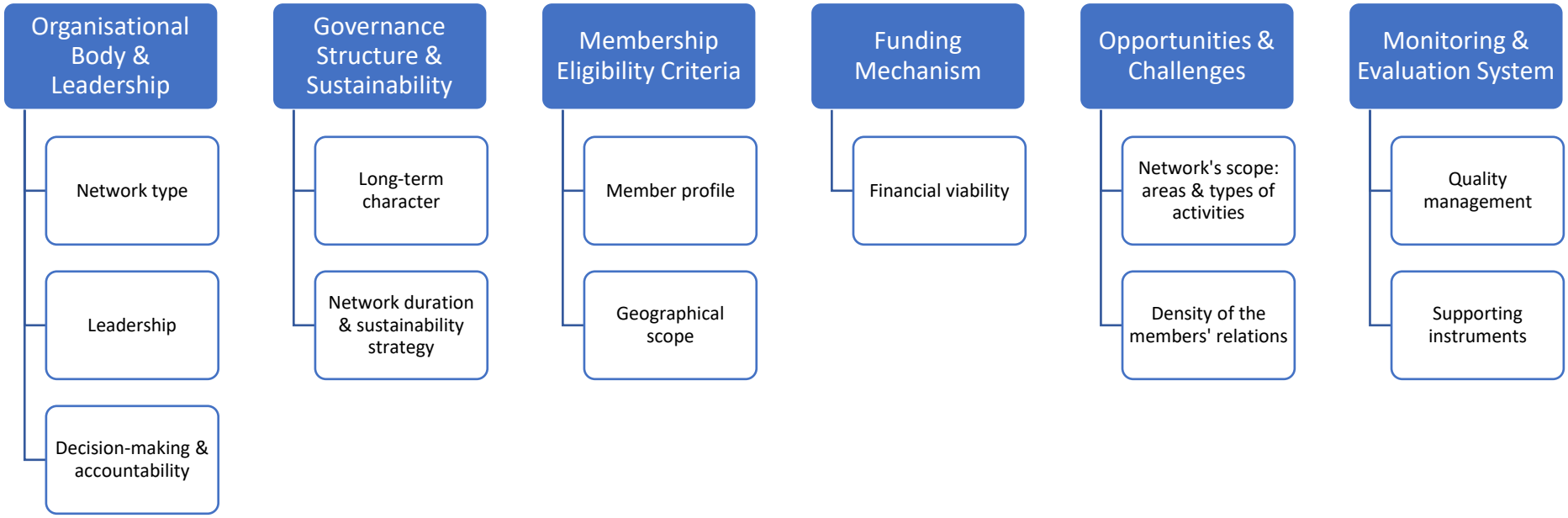
				expectations, etc. to improve future JAs.
Multidisciplinary Field Exercise in Rieti (UNITOV)	Rieti, Italy 15-17 Nov, 2022	Field Exercise (multidisciplinary) Workshop	• Chemical • Rescue & Relief	• JAs conducted with other EU projects **do not always have similarly aligned goals, objectives, and target audiences** for their exercises; this is an important aspect to consider before investing resources, time, and personnel to organise a "joint" JA. • The **COVID-19 pandemic** has caused some challenges to the organisational process of the JAs, through which each nation-state and TC must dictate the **protocols and requirements** that each member must follow to participate. • Although standardisation is a common goal, **flexible templates** allow TCs the ability to integrate their own needs into the organisational process and could be beneficial to the overall training outcomes.

Tabletop Exercise in Poland (WSU)	Warsaw, Poland 7-9 Mar, 2023	Tabletop Exercise (multidisciplinary)		*As of the completion of this report, an evaluation of this JA has not yet been documented.*
Final Exercise (VESTA & UCL)	Ranst, Belgium 13 May, 2023	Field Exercise (multidisciplinary)		*As of the completion of this report, this JA has not yet occurred and therefore no information is available.*
Final Conference (UCL)	Brussels, Belgium 13-14 June, 2023	Conference		*As of the completion of this report, this JA has not yet occurred and therefore no information is available.*

4 Plan to Pool Resources & Optimise Investments for the European CBRN TC Network

As previously mentioned in Section 3.1.4, the '**Pooling Mechanism'** identified six areas of focus for a complementary resource pooling model to be applied to the eNOTICE network. These focal areas - organisational body, governance structure & sustainability, eligibility criteria, funding mechanism, opportunities & barriers, and monitoring & evaluation – cover strategic elements for the **long-term sustainable framework** of the network through which it is possible to develop a **resource pooling and investments plan**. The initial sustainability plan for the network was previously elaborated and subsequently proposed in deliverable D2.5 (*Framework and Sustainability plan for the eNOTICE network*), and its main elements have been continuously analysed in the succeeding 'Progress Reports' (D4.10, D4.11 & D4.12). The elements covered in D2.5 involve aspects related to the **strategic organisational and financial structure of the network**, directly influencing the types of services and resources which are pooled and the potential for investments in **funding for future training, research and technology opportunities**. The following table demonstrates how the main aspects proposed in the network sustainability correlate to the abovementioned pooling mechanism, providing a strategic structure to **increase network functionality and ensure its long-term sustainability**. Further detail on each of these individual elements will be covered in the succeeding section of this chapter.

Table 9 Outline of Pooling Mechanism Applied to eNOTICE Sustainability Plan[27]



[27] eNOTICE D2.5 – Framework and Sustainability plan for the eNOTICE network

4.1 Pooling Mechanism Applied to the eNOTICE Framework and Sustainability Plan

4.1.1 Organisational Body & Leadership

The **primary decision** influencing the long-term sustainability of the network and any related resource pooling mechanism flows from the type of **organisational structure** which is established to maintain the network at the end of the project. Based on the previous proposals for the network sustainability plan, the **three main aspects** of the organisational body correspond to:

Figure 7 Main Elements of Network Organisational Body

The **rationale and objectives** of the network - its scope, members, and capabilities - directly influence the organisational structure and the consequent designation of related roles and responsibilities. For the eNOTICE network pooling mechanism one major point of discussion has been the selection between **informal vs. formal character** for the network. A formal approach would imply that the network transforms into a **legal entity**, while an informal approach embodies a **bottom-up leadership method**. Based on the overall aims of the eNOTICE network, the needs and opinions of network members (as discussed in the previous chapter) and the related capabilities of a complementary resource pooling framework, it could be beneficial to implement a **semi-formal approach**[28], specifically where decision-making and accountability for the network are concerned. A semi-formal approach refers to an "**unincorporated association**", or the creation of an organisation established by agreement between individuals to **pursue a common purpose or goal**, other than for financial profit.[29]

[28] Suggestions made by Campus Vesta in D2.5 (page 86) to evaluate implementing a semi-formal or completely informal network rather than a formal approach.
[29] UK Government. https://www.gov.uk/unincorporated-associations#:~:text=An%20'unincorporated%20association'%20is%20an,group%20or%20a%20sports%20club). Also referred to as a *factual organisation*, *association de fait*, or *Feitelijke Vereniging*

In a semi-formal approach, a set of statutes are established, along with a specific governance structure, procedures, and regulations, to ensure a **minimum level of commitment** from network members. This structure encompasses the benefits of both a formal and informal approach, by enabling members to organise an **increased number of activities, services, and resources,** leading to greater opportunity for training, knowledge sharing, and technology testing.[30]

It is also important to keep in mind that there is a **mutual interest in collaboration** between the TCs and the R&D&I industries, indicating the need for a **public-private partnership** that is organised in such as way as to consider the input and expectations of each, and provide support and services to both parties.[31] Considering the member recommendations collected throughout the project and specifically in the 'Progress Reports' of Work Package 4 (*Integration, optimisation, and joint activities*), the following is an example of a **semi-formal leadership structure** which could be implemented for the future eNOTICE network[32]:

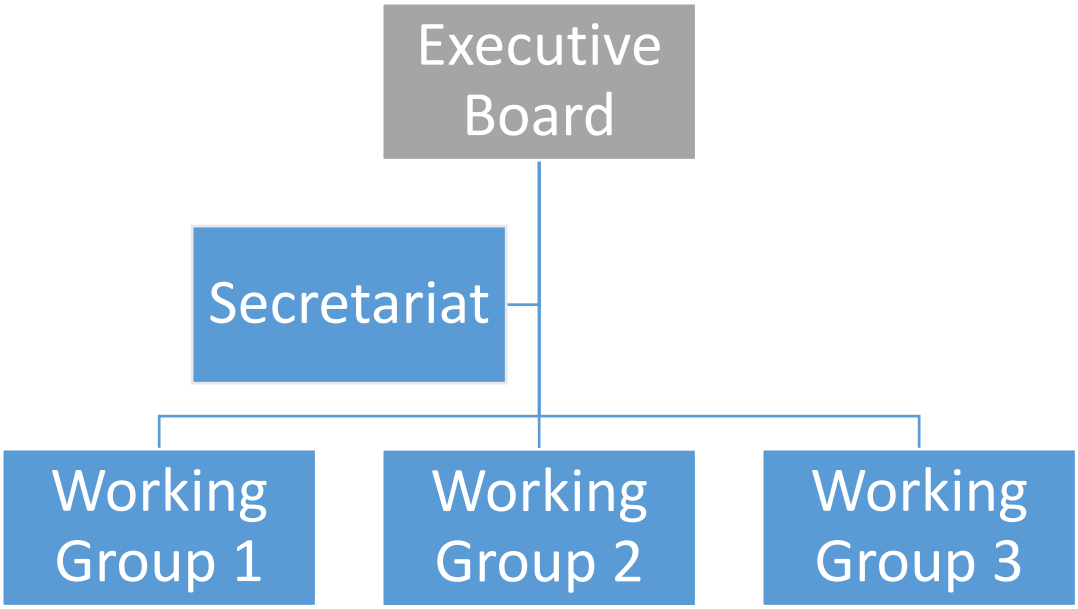


Figure 8 Example of Semi-Formal Network Leadership Structure

[30] AETS consortium. January 2013. *Study on the best option of disaster management training network Directorate General for Humanitarian Aid and Civil Protection – DG ECHO*. Chapter 5. https://op.europa.eu/en/publication-detail/-/publication/a08a94d7-d38f-4c5d-a86b-1484f13efdf7
[31] D4.12 eNOTICE Recommendations for CBRN R&D and CBRN policies. Version 5. (page 21)
[32] AETS consortium. January 2013. *Study on the best option of disaster management training network*. Chapter 5

On 28 February a meeting with the German CBRN Defence industry association took place and the eNOTICE project was introduced seeking for potential support regarding sustainability. The figure 7 shows the advantages for industry and TCs coordinated by a secretariat. Some companies showed interest in future cooperation and also in attending the fear alongside the JA at Campus Vesta on 12 May 2023.

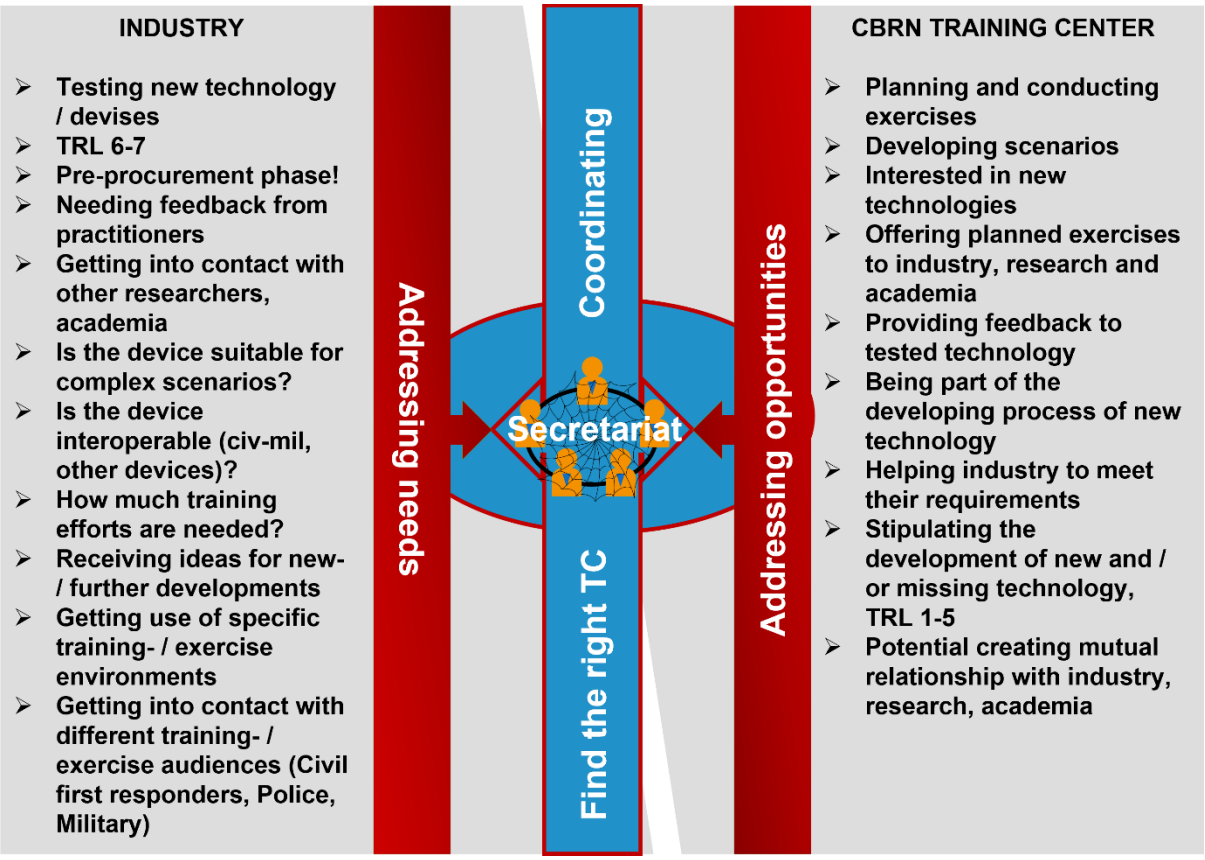


Figure 9 Advantages for industry and TCs coordinated by a secretariat sustaining the eNOTICE project

The main characteristics of a semi-formal network structure involve[33]:

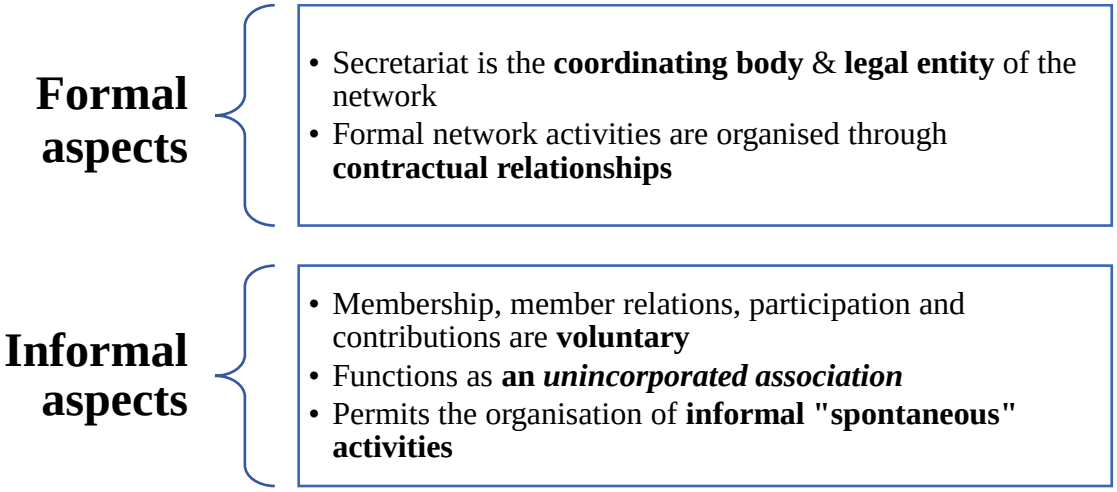


Figure 10 Main Characteristics of a Semi-Formal Network[34]

This semi-formal framework guarantees the **opportunity for bottom-up participation**, by encouraging **ad hoc initiatives** facilitated by users and practitioners or technology developers to conduct activities and share resources for the **collective benefit** of the entire network.[35] With this type of structure, the Working Groups contribute to specific areas, providing **specialised focus** while also **monitoring and evaluating the overall progress of the network**. For the eNOTICE network, there are several areas of focus which could be identified for the purposes of creating these specialised sub-groups, such as:

- Exchange and harmonisation of training standards and curriculum
- Identifying gaps in standardisation (e.g. decontamination of disabled persons)
- TC/JA as testbed for newly developed industry capabilities (TRL 5 and above)
- Exchange of needs between practitioners and R&D&I
- Policy makers forum

A more detailed description of the governance structure, member profiles, member involvement and interrelations, and individual responsibilities/roles within the network resource pooling mechanism will be discussed in the forthcoming sub-sections.

[33] Ibid.
[34] Ibid.
[35] AETS consortium. January 2013. *Study on the best option of disaster management training network*. Chapter 5

4.1.2 Governance Structure & Sustainability

The type of **governance structure** established for the network influences its potential for **durability, sustainability, and long-term operations**. Relatedly, the resource pooling capabilities, network services, and investment opportunities depend on the long-term vision, the responsibilities of the governing bodies, and the financial framework of the network. Using the semi-formal network approach as a guideline, the following table offers an outline of how the resource pooling mechanism could be applied to the roles and responsibilities established by a semi-formal governance system:

Table 10 Semi-Formal Network Governance Structure & Resource Pooling Framework[36]

Role	Participant Types	Responsibilities within a Resource Pooling Framework
Executive Board	• TCs • R&D companies/organisations	• Pursue the **needs** of the network • Engage in **opportunities** beneficial to network stakeholders • Decide on **strategic aspects** • Encourage member **participation** and **spontaneous interactions** • Provide **support** to the Secretariat • **Establish priorities** for the network together with the Working Groups • **Represents** the network to Third Parties
Secretariat	• An entity with its own legal structure/authority	• Provides **legal authority** and **formal leadership** of the network • Provides **organisational management** of formal network activities • Manages **administrative aspects** of the network • Offers **information & communication** to network members • **Supports spontaneous activities** organised informally by network members • **Manages the financial aspects** of the network, including raising funds, collecting voluntary financial contributions, and managing the network budget • **Coordinates the addressed needs of industry with opportunities provided by TCs**
Working Groups	• Representatives of network members in various areas of focus	• Provides **steering capacities** for the network

[36] AETS consortium. January 2013. *Study on the best option of disaster management training network*. Chapter 5 & eNOTICE D2.5

	(i.e., organisation of activities, network monitoring & evaluation, academia & research, technology development, standardisation of training practices, etc.)	• Proposes **activities and solutions** to relevant issues • Ensures the **quality monitoring and evaluation** of network operations, activities, and research & training outcomes • Facilitates the **exchange of information and collaboration** among members • **Identifies** best practices, opportunities, new products, etc. • **Disseminates** network information • **Promotes** the network externally • Encourages member **participation**

The Executive Board will govern the network and will be **renewed every three years**. The overall goal is to maintain the network running at **low cost**, while also providing maximum support to TCs for the organisation of JAs and exploration of R&D&I opportunities. These formally organised exercises will require a **budget** to cover the costs of things such as facilities, catering, and potentially the travel & accommodation for invited guests.[37] With the semi-formal network structure, these financial aspects would be the **legal responsibility and management of the Secretariat**. The Secretariat is formed by a secretary - part-time employee of the organisation who receives compensation from network funds for occupying this position, and two of three training centers from the network, which takes legal and financial responsibility for the network. The network funding mechanism will be further explored in sub-section 4.1.4.

[37] D4.10 (page 12)

4.1.3 Membership Eligibility Criteria

The decision guiding which types of actors can participate in a European CBRN TC Network also determines the **extent and level** of the capabilities, services, equipment, technology, knowledge, and expertise which can be pooled among the members for increased investment in training capacities. The two main components which influence these factors can be divided into two categories:

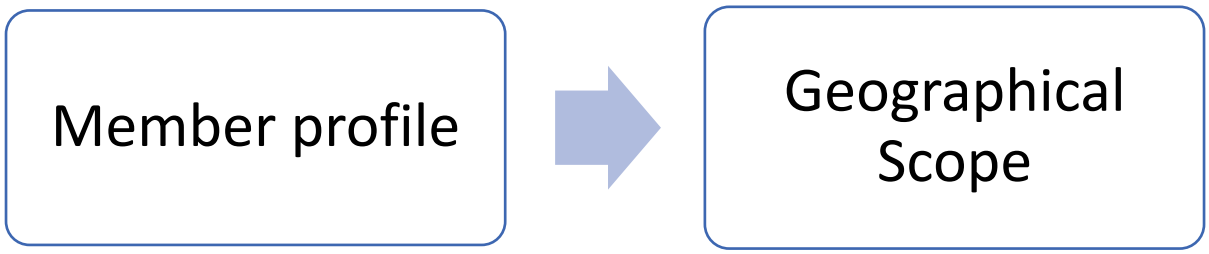


Figure 11 Diagram of Membership Eligibility Criteria

At the current stage of eNOTICE, the **core members** of the network are the CBRN TCs (both internal and external to the project consortium). The other CBRN actors/stakeholders – states, practitioners, technology providers, and policy makers – are **supporting members** whose diversity in infrastructure, areas of focus, and expertise contribute to the extensive resource pooling which has been tested and developed through the project's numerous JAs. Membership is requested by submitting a **questionnaire**, which can be found on the eNOTICE website.[38] The initial **geographical scope** of this network was intended to include only **EU Member States and associated nations**.[39] However, input from the network members on harmonisation and standardisation of training has led to reflection on the potential for the CBRN TC Network to extend its geographical scope by **providing training, support, and services on an international level**.[40] This relates back to the stakeholder needs outlined in Table 3, where many TCs and practitioners have expressed the desire for a common training curriculum (which in this case could be implemented and practised both within the EU and internationally).[41] With this in mind, the member profile and geographical scope of a semi-formal network could be determined as the following:

[38] D2.5 (page 61)
[39] As per the original eNOTICE DoA.
[40] D4.10 (page 14)
[41] One example of this is a TC's use of the Melody curriculum to provide CBRN preparedness training in Southeast Asia. https://www.eeas.europa.eu/delegations/cambodia/eu-cambodia-partnership-brings-multi-agency-cbrn-response-exercise-enhance_en

Table 11 Description of Member Profile & Geographical Scope

Member Profile		Geographical Scope
TCs	• Free membership for public organisations (TCs that act on behalf of local/regional/national authorities) • Membership fees – for private TCs	• EU Member States • Associated Nations
Practitioners	• Individuals or entities • Free membership	• Worldwide[42]
States	• Free membership or graduated membership fee • Support to TCs of the State that are members in the network	• EU Member States • Associated Nations
R&D (Academia & Research Institutes)	• Membership fees	• Worldwide
Technology Industry (Large industries, SMEs, technology operators etc.)	• Membership fees or graduated membership fee	• EU Member States only
Policy Makers	• Free membership	• EU Member States only

The implementation of membership fees is a vital component in securing network sustainability over time. There are several options which could be explored for certain members (R&D&I and private TCs) whose participation in the network would be obtained through a financial contribution. Graduated fees for certain types of member profiles, specifically where industries and businesses are involved, may also assist with characterising the potential contribution of certain parties, and limit their access to information and resources shared by the whole network.

Option 1: a **permanent fee**

Option 2: a **specific fee** for defined benefits

Option 3: a combination of the first two options in which,

[42] UCL suggestion in D2.5 to use ENCIRCLE approach for geographical scope (page 82)

- a **lower permanent fee** would grant access to specific benefits
- **additional fees** would apply for certain activities such as **product/technology testing**

With a semi-formal network structure, network sustainability depends largely on member participation. Therefore, approved and accepted members will be expected to **remain consistently active** by contributing (to the best of their capacities) to network activities. Members should also be required to abide by a **Code of Conduct**[43]. These specific guidelines and expectations can be outlined in a type of **membership contract**, binding members by holding them **ethically accountable** to their role in promoting the needs and objectives of the network.[44]

4.1.4 Funding Mechanism

The **funding mechanism** is a critical aspect in fostering the sustainability of the network and in supporting its main objectives: to increase training capacities, knowledge, and expertise through activities, collaborative opportunities, research, and technological advancements, and consequently improve the EU's preparedness and resilience against CBRN emergencies. A funding mechanism ensures that **investments and resources** are both **readily available** and **optimally utilised** to support the achievement of these goals. In a semi-formal network structure, **financial capacity is limited** due to the fact that membership is voluntary, and the network's overall goal is not to procure a financial profit. With this type of structure, the main source of funding would come from the **membership fees** required of certain stakeholders such as private industries and research centres, and from **voluntary financial contributions** or any **external funding** which may be acquired on behalf of the network. As previously mentioned in sub-section 4.1.2, the **Secretariat** will hold the function of managing the network's operating budget and financial resources. These funds (see Annex 1) will be primarily allocated towards the **organisation and execution of formal network activities, the operation of the web-based network platform (i.e., the ECC), and remuneration for the role and responsibilities associated with the Secretariat position**.[45] This funding scheme ensures **financial viability** by creating formalised expectations and a budget management structure, while simultaneously providing **opportunity for informal interaction** and collaboration among network partners according to their realistic and present **needs and requirements**.

[43] Ideas for this could be taken from the EDA's Code of Conduct on Pooling & Sharing: https://eda.europa.eu/docs/news/code-of-conduct.pdf
[44] AETS consortium. January 2013. *Study on the best option of disaster management training network*. Chapter 5
[45] Ibid.

4.1.5 Opportunities & Challenges

Another critical aspect of the resource pooling mechanism involves the **opportunities and challenges** which affect the sustainable functioning of the entire framework. These opportunities for **network growth and development** and threats to its **operational efficiency** have also been deliberated by the project partners through the SWOT assessments, previously discussed in Chapter 3. The creation of a network of stakeholders with similar goals and expectations provides opportunities for the **sharing and division** of services, personnel, expertise, innovation, etc. to increase training outcomes and the overall benefits for each member. In practice, these benefits stem from the **potential cost-efficiency** and **optimisation of available services and resources** through **JAs**. The success of the resource pooling framework is derived from a mutually shared desire among all network members to **achieve common goals**, such as:

- Recognition and understanding of the **diverse demands and needs of stakeholders**
- Provide opportunity **to increase practitioners' knowledge and skills** in CBRN preparedness and response
- Increase **awareness, outreach, and research** about CBRN emergencies
- Enhance opportunities to **develop, test, and demonstrate** new and innovative technologies and increase **access to existing field equipment**
- Provide **infrastructure, expertise, and training support** to increase **multidisciplinary and cross-border capacities** in the overall efforts to improve EU CBRN preparedness and response capabilities at the local, regional, national, and international levels

The two areas of the network sustainability plan which influence the scope of these opportunities and activities, and the roles and responsibilities of the members in relation to these activities, objectives, and outcomes are:

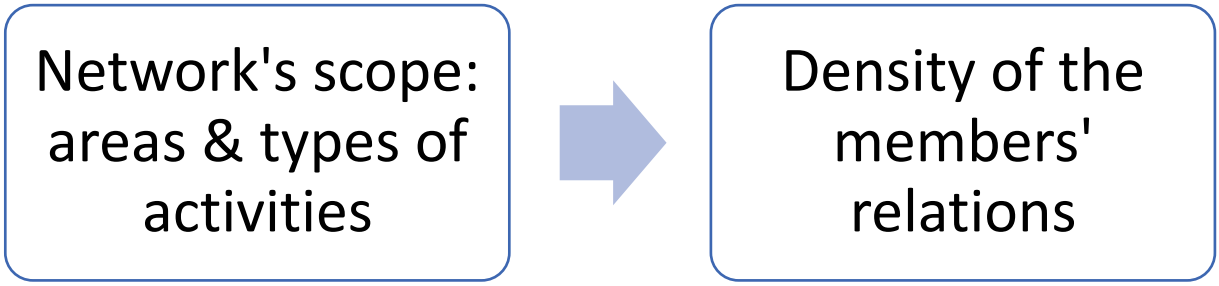


Figure 12 Aspects Which Influence Network Opportunities

The network's scope refers to the definition or delineation of the field(s) or discipline(s) covered by the network and the related activities. In a CBRN TC Network, the main focus area is **Chemical, Biological, Radiological, and Nuclear risks**, including all **incidental, accidental, and intentional incidents** and the subsequent **singular or multidisciplinary interventions** of first responders.[46] The eNOTICE network's scope, areas and activities have been translated into the previously described (see Chapter 3) six central elements:

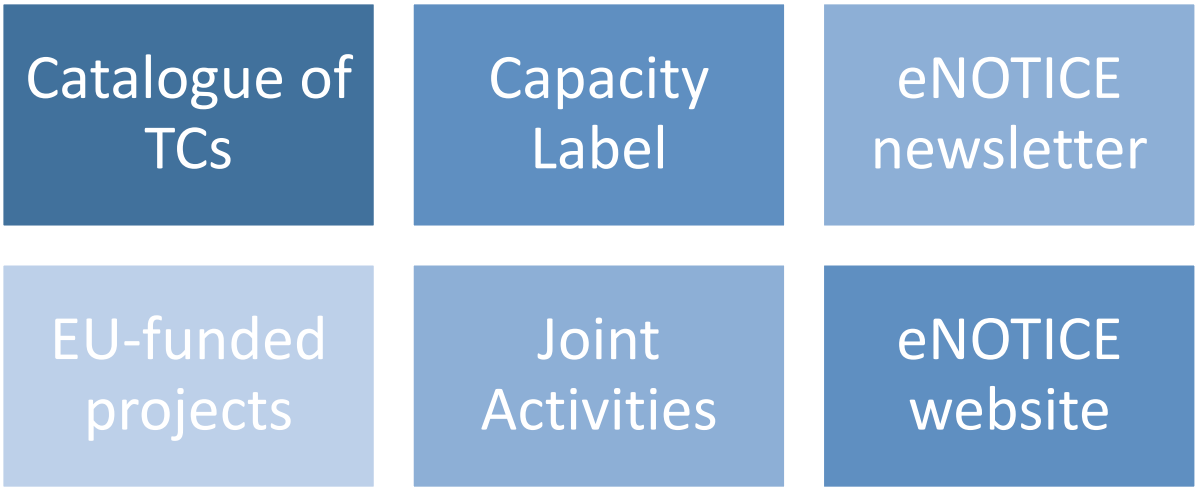


Figure 13 Six Focal Elements of eNOTICE

These elements directly influence the **density of member relations**. For example, the TC catalogue provides information on location, areas of expertise, accessibility, size of training space, amenities, and training type (Capacity Label). With a semi-formal network structure, this TC catalogue allows members to develop **bi-lateral partnerships** and/or arrange **spontaneous activities** to align stakeholder's needs with a specific TC's capabilities and services. The potential results of bi-lateral partnership activities should be made accessible to all members for the benefit of the network. To ensure this, it will be necessary to include specific statues in the "membership contract" which indicate specific regulations for the organisation of activities and arrangement of partnerships not formally funded by and/or managed by the network itself.

In general, this **horizontal approach** to member relations greatly encourages an increased quantity of member interactions and **needs-based initiatives**, resulting in **higher quality** training outcomes and research/technology outputs.

[46] D2.5 (page 58)

4.1.6 Monitoring & Evaluation

The final component in the sustainability plan involves the consistent monitorisation and evaluation of the network's efficiency, specifically regarding the resource pooling mechanism and optimisation of investments by network members. Monitoring and evaluation support a strategic and results-oriented approach to the continuous improvement and development of the network. This can be achieved by implementing two major aspects:

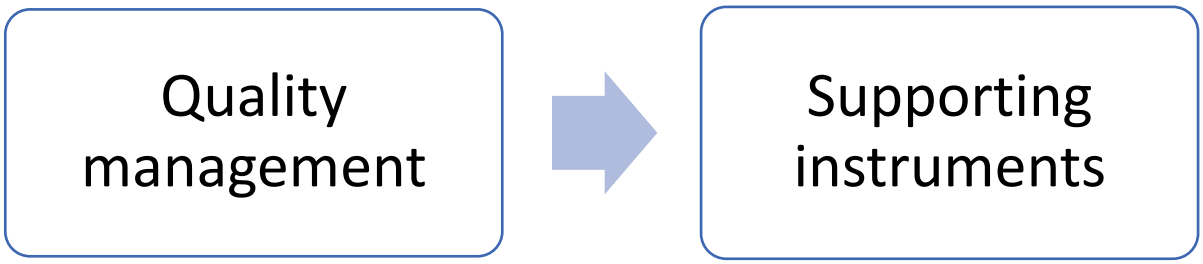


Figure 14 Aspects for Network Monitoring & Evaluation

Quality management refers to the implementation of **SOPs, KPIs, and network milestones** which can be managed and assessed throughout the development of the network. As a semi-formal network, these can be developed and monitored by the Working Groups, under the guidance of the Executive Board. The evaluation of network activities, research, innovation, policy, etc. can be conducted with the assistance of **supporting instruments**. During the eNOTICE project, these supporting instruments have been developed in the form of a web-based eNOTICE Community Centre platform (ECC), a Capacity Label, and guidelines (templates) for the organisation and assessment of Joint Activities. As the main supporting instrument, the **ECC** aids in the promotion of activities, dissemination of research and information about other EU projects, tools for communication and exchange of knowledge, and in fostering partnerships among network members for ad-hoc participation in training and skills development exercises.[47] These parameters can continue to be utilised in a semi-formal network structure, establishing a **membership contract** which stipulates the scope and extent of involvement, expectations, and achievable goals for each participating member.[48]

[47] D2.5 (page 69)
[48] AETS consortium. January 2013. *Study on the best option of disaster management training network*. Chapter 5

4.2 Suggestions for Additional Resource Pooling & Network Investments

Over the past six years of the project's development, eNOTICE has pursued effective measures to establish and maintain a sustainable network framework which can be used as the basis for a future network structure. The resource pooling mechanism described throughout this document should be the guiding element to determine the future organisational and operational structure of the network and its capacities development. In addition to the suggestions on organisation, governance, eligibility, funding, opportunities, and evaluation outlined in the above section for a semi-formal network, there are many other ways in which the resources and capabilities of network members can be pooled together for increased investment in CBRN training:

- Besides the opportunity for network members to be informed about the work of other EU-funded projects, the network itself could potentially **participate in future projects as one single entity**, collectively pooling resources with other experts outside of the network to further enhance CBRN research, technology, and knowledge for the benefit of all network members.[49]

- In response to member concerns about the pressures associated with time & costs of JAs and/or other restrictions preventing more active participation, one suggestion is for the network to **formally meet only once a year for an annual conference**, whereby members will have the opportunity to **discuss network proceedings, research and developments, and host an industrial exhibition** for industries and businesses to demonstrate and market their latest technology.[50]

- Additionally, to encourage research, development, technology testing, etc., and further the goals of innovation in CBRN preparedness and response, TCs could host '**Open Days**' to provide industries with the opportunity to **demonstrate and market their products** to network members and discuss the **potential for future technological developments and collaboration**.[51] In this way, the network is responsible for coordinating between the needs of industries and the opportunities provided by TCs to test new technology devices[52]:
  - Test to understand if the tech is suitable for complex scenarios
  - Test in the pre-procurement phases (TRL 6-7)
  - Test for interoperability (civil & military use)
  - Obtain feedback for future developments

- Part of future development of the ECC platform could include both a **mobile-based application**, through which members have easy and quick access to the network platform, and the creation of a **network intranet or shared drive** on which information, multimedia, research, documents, etc. can be shared amongst the members of the entire network or limited to specific Working Groups.

[49] D4.10
[50] Suggestion made by eNOTICE partners at WMP during the deliverable review process.
[51] D4.11
[52] See results in Fig. 9

➢ Provide an outlet for nation-states or publicly funded entities to create bilateral and multilateral efforts whereby **equipment, maintenance, spare parts, etc. can be shared** for increased efficiency, and **expensive assets** such as vehicles can be **purchased together** (for use in joint operations).[53]
➢ Advocate for the need to invest in **new facilities and infrastructure**, and the development of common **training courses/curricula** which can be shared and utilised by all network members.[54]
➢ Create **multidisciplinary synergies** on additional CBRN preparedness & response issues such as: o International information exchange and communications o Early-warning detections systems o Cybersecurity

[53] W. Bruce Weinrod. *American Enterprise Institute for Public Policy Research.* August 2014. Pooling and Sharing: The Effort to Enhance Allied Defense Capabilities. https://www.aei.org/research-products/report/pooling-and-sharing-the-effort-to-enhance-allied-defense-capabilities/

[54] For example, the EDA's Helicopter Training Programme (HTP) https://eda.europa.eu/docs/default-source/eda-factsheets/final-p-s_30012013_factsheet_cs5_gris

5 Conclusions and Next Steps

5.1 Summary of the plan to pool resources and optimise investments

As part of Task 4.4: *Plan to pool resources and optimise investments for increased CBRN Training Capacity*, this deliverable aimed to envision and outline fundamental aspects, based on both theoretical concepts and a detailed review of the network's strengths, challenges, and opportunities, for a sustainable resource pooling framework. The aim of this framework is to increase the efficiency and training outcomes of the eNOTICE CBRN TC network, by reinforcing current best practices and integrating additionally beneficial elements to address identified gaps and future needs. This deliverable was divided into five progressively related chapters, beginning with a general introduction in Chapter 1 to the eNOTICE project and the intended goals of the abovementioned tasks. Chapter 2 offered a theoretical framework by discussing research and literature on the relevance of such a network for the CBRN defence industry and identification of best practices and methods for pooling and sharing resources within a European CBRN TC network. Building upon these concepts, Chapter 3 provided an analytical overview of the network's needs by introducing the main stakeholders in the eNOTICE network and demonstrating member resource capacities, network opportunities, and specific input related to the goals and vision for future network progress. Finally, Chapter 4 addressed the sustainability of the network moving forward. This chapter offered a detailed plan for pooling resources and optimising investments by evaluating the operational and organisational features of a semi-formal network structure and their potential application to enhance the needs and objectives of the eNOTICE network.

5.1.1 eNOTICE 'Action Plan' to pool resources

There have been many lessons learnt throughout the course of project eNOTICE, contributing to a thorough understanding of what is necessary to guarantee network sustainability moving forward. Throughout the past almost six years, some concerns have been raised by network members and project partners regarding specific aspects of future network organisation, operations and funding. These concerns have included the following[55]:

- TC restrictions or limitations (especially for publicly funded and military ones).
- Hesitancy to open network membership to all industries without specific eligibility criteria/limitations.

[55] From the original D5.12 SWOT analysis (see also Table 3)

- The burdens placed on members in the form of time and costs to organize and participate in JAs.
- A lack of harmonisation and standardisation in training best practices, knowledge, and opportunities for increasing capabilities.
- Technological challenges with communication systems, equipment, field conditions, etc.
- The environmental impact of a training network & the possibility for green procurement.
- Gaps in preparedness.
- Infrequent participation and communication among members.

In their own ways, each of these components are crucial to the efficiency and sustainability of the eNOTICE network and steps must be taken to ensure that these are addressed as the network progresses into its next phase of development. Chapter 4 provided a reasonable potential 'Action Plan', enabling the eNOTICE network to respond to specific gaps where necessary and address continued challenges, with the overall goal of transitioning the network into a practical and sustainable semi-formal structure. As described in the preceding chapter, a semi-formal network structure recognises that all members have different capabilities, goals, limitations, etc., and addresses the need for flexibility to allow each member to benefit from the resources and opportunities offered by participating in the network. Through this semi-formal structure, the network is organised into three major components: an Executive Board, a Secretariat, and individual Working Groups. Each occupies diverse leadership roles, complementing the responsibilities of the others within the governance and organisational structure, and providing opportunity for continuous network advancements and increased capabilities. Among these various responsibilities, network leadership and a semi-formal operational and funding structure will contribute to addressing the critical issues identified earlier by:

- ✓ Identifying a governing member whose operational and legal responsibility for the network will contribute to its overall accountability and sustainability.
- ✓ Determining specific membership eligibility criteria for the good of the network, and the establishment of an ad-hoc membership fee scheme to provide additional funding for network operations.
- ✓ Maintaining expectations and encouraging active member participation and collaboration both formally and informally, through in-person and/ or virtual meetings and via group discussions on the ECC platform.
- ✓ Organising and managing JAs which benefit all members and contribute to achieving joint network goals.

- ✓ Reduce the CBRN defence industry's environmental impact by utilising collective resources to strategically increase training capacities while simultaneously limiting the independent environmental effects of individual members.
- ✓ Addressing both existing and emerging issues in training harmonisation, standards and preparedness.
- ✓ Monitoring and evaluating network operations to guarantee enhanced efficiency over time.

5.2 Future implications and next steps

The future of eNOTICE is open to a multitude of opportunities, based on the strengths of its current members and their willingness to continue pursuing a sustainable and functional network moving forward. In addition to the possibility of creating a self-sustaining and independent network structure as outlined in this deliverable, the eNOTICE partners are also open to furthering its development through a secondary European project. This eNOTICE "2" would enable the network to continue addressing member needs, identifying best practices, and progressing in its understanding of specific elements for a future independently funded and organised CBRN TC network.

There are also additional aspects related to the potential for future developments which were not discussed in this report as they would require further research and member input to understand the extent to which these would be possible. One such example is the potential for increased harmonisation and standardisation capabilities by combining the work of eNOTICE with the work of other EU-funded projects, such as MELODY and VERTIgO, to implement a harmonised training curriculum for standardised in-person training or through a common shared Virtual Reality platform designed and available for all TCs of the eNOTICE network.

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ANNEX 1: Projected Annual CBRN TC Network Operational Expenses

Provisional costs for operating the web-based platform	
A preliminary estimate, which was originally developed for the platform, covers the net costs of the management and maintenance (without developing new features) of the ECC and is:	
Item	**Cost (EUR €)**
Platform server	2.500€
Personnel costs (8PM/year + 25 percent)	67.000€
Total:	**69.500€**

Provisional costs for role of Secretariat	
Item	**Cost (EUR €)**
Personnel costs (4PM/year + 25 percent)	24.581,67€
Total:	**24.581,67€**

Provisional costs for Executive Board meetings	
These costs are provided basing on the eNOTICE estimated budget.	
Item	**Cost (EUR €)**
Personnel costs (1PM/year + 25 percent)	6.145,42€
Costs of organising meeting (1x a year)	5.000€
Total:	**11.145,42€**

Projected expenses for the organisation of formal network activities	
Item	**Cost (EUR €)**
Personnel costs (4 months + 25 percent)	24.581,67€
Costs of organising network activity (3x a year)	22.500€
Total:	**47.081,67€**
TOTAL (ALL EXPENSES)	**152.308.76€**