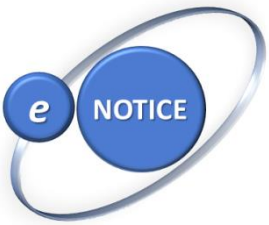

eNOTICE
European Network Of CBRN TraIning Centres

D3.6 Report on eNOTICE information and communication platform basic version (V0)

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Executive Summary

This deliverable describes the version zero (V0) of the eNOTICE web-based platform, developed within Task 3.2. This description includes the requirements gathering and analysis methodology used, the usage scenarios derived from this methodology and the architecture for a platform that satisfies these requirements. In addition, this deliverable suggests tools and concepts that can be implemented for version one (V1) of the platform.

The platform itself can be found online at https://www.h2020-enotice.eu/ and in D3.7.

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1 Introduction

The following chapter will present a short motivation for this deliverable, the objective it wants to achieve and the approach how this objective is achieved.

1.1 Motivation

The eNOTICE web-based information and communication platform, which is called "eNOTICE Community Center" (ECC[7]), is an essential tool for the eNOTICE project. It enables the community to increase the visibility of individuals and training centers (TCs), communicate, share information and pool resources collaboratively, using only a web browser. The basic networking idea is shown in Figure 1.1. The motivation behind this document is to refine these goals and to identify potential solutions that can help the community reach these goals.

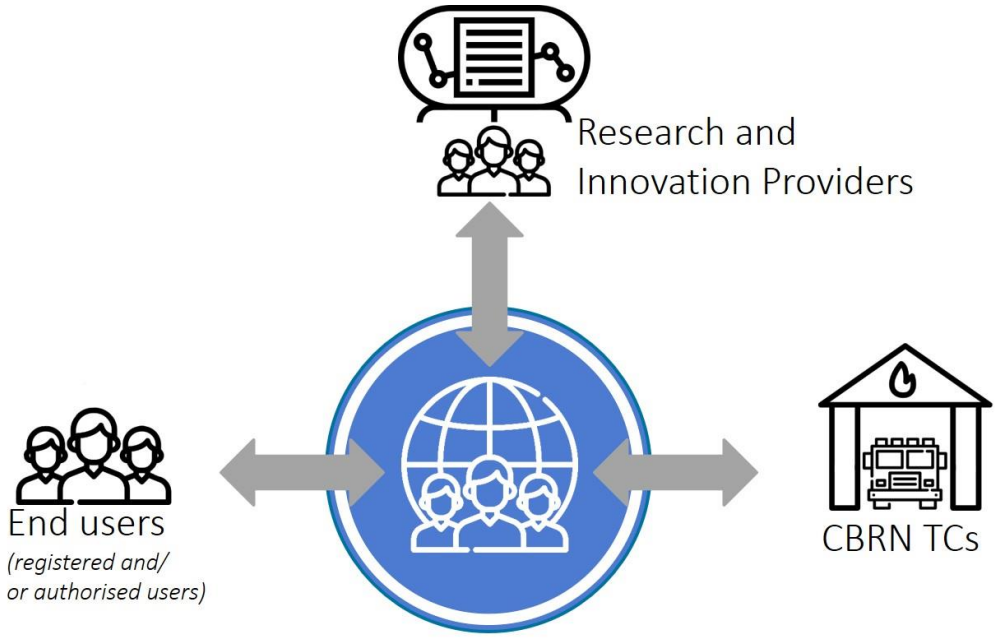

Figure 1.1: The idea of the eNOTICE Community Center

1.2 Objectives

This deliverable directly supports the overall goal of eNOTICE, which is to establish a European network of CBRN training, testing and demonstration centers aiming at enhancing CBRN training capacity for improved preparedness and incident response through increased collaboration between CBRN training centres and practitioners' needs-driven CBRN innovation and research. Task 3.2 develops web based tools that support this overall objective.

This document has three main objectives, based on the description of Task 3.2:

The first objective is to establish a well-founded and efficient requirements gathering methodology in order to gather requirements and ideas for the ECC.

[7] "eNOTICE web based platform" and "eNOTICE Community Center" are synonyms, with the latter being used as "brand name"

The second objective is to define a system architecture for the ECC that is modular, flexible, based on open source software and can solve not only the requirements gathered in the first step but also potential future requirements.

The third objective is to research and implement tools that fit within the previously defined architecture and solve identified usage scenarios.

1.3 Approach

The three objectives are reached by first developing a requirements gathering methodology based on existing methods (Chapter 2), applying this methodology in eNOTICE to gather user requirements (Chapter 3), defining an information architecture that is able to satisfy these requirements (Sections 4.1 and 4.2) and by researching tools that fit within the defined architecture and solve the previously discovered requirements (Sections 4.3 and 4.4).

Please note that this deliverable covers only version zero (V0) of the ECC, released three months after the start of the incorporating task 2.3. Therefore, the main focus of this deliverable is on objectives one and two with the aim of creating a solid foundation for objective three, which will mostly be covered in the follow-up report on version one (V1) of the ECC. Nevertheless, prototypes for some features, e.g. the web based roster, are already part of V0. Constant monitoring and evaluation of the ECC is also embedded into other tasks (see Section 5.2).

2 Requirements analysis

Requirements analysis is an important step to agree on and visualize the right product [Hull et al. 2011]. Requirements form the basis for every project and define the function of the system to satisfy the needs. In this chapter, the requirement analysis process for the eNOTICE communication and information platform will be described.

2.1 Methodology

The methodology used is based on adaptive/agile software development described in [Rupp 2007] combined with design science research as described in [Hevner 2007]. Figure 2.1 illustrates this combined methodology and will be described in detail in the following paragraphs.

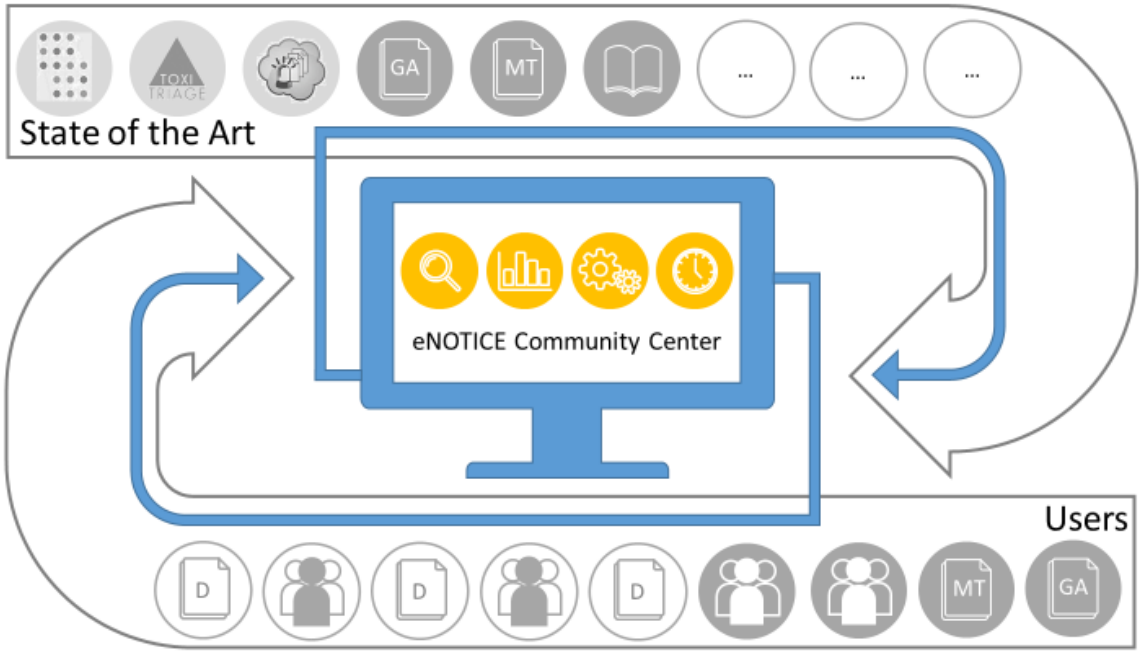

Figure 2.1: The overall eNOTICE requirements engineering methodology

2.1.1 State of the Art

The state of the art includes know-how gained by UPB in similar projects, for example TEAMWORK (a serious gaming community, described in more detail in D2.4), Toxi-Triage and SecInCorRe (which developed a common information space for its members). Also part of the state of the art are the eNOTICE Grant Agreement, a Master thesis on eNOTICE requirements by a student of UPB [Schultz 2017] and generally available literature. The general available literature surveyed includes documents on platforms and projects similar to eNOTICE (e.g. the Community of Users, EDEN, ENCIRCLE and DM-TRAINET) as well as literature on requirements engineering itself (e.g. [Pohl and Rupp 2009] and [Rupp 2007]).

As the information gathered within eNOTICE and the ECC is published (e.g. in the form of deliverables), it becomes part of the state of the art.

2.1.2 End user Input

As the end users will use the ECC, their input on requirements is very valuable. The term end users includes everyone who will use the ECC, for example CBRN training centers, practitioners and innovation providers. Collecting input from the end users started with the eNOTICE Grant Agreement, to which end-users contributed, and the previously mentioned master thesis [Schultz 2017]. The thesis included a survey for the eNOTICE project members, the results of this survey can be found in Section 6.1.

Additional end user input was collected in the form of workshops and presentations at the Joint Activities[8] in Gurcy and Nîmes. These events were not only attended by the eNOTICE consortium members but also by external experts and thus allowed requirements gathering from a wide range of end users. The methodology used to conduct the workshop is described in Section 2.2 and the gathered results can be found in Section 6.2.

As the workshop proved to be an efficient way for gaining high-quality input, similar workshops can be repeated at eNOTICE Joint Activities in the future. The end user input from workshops is complimented by eNOTICE deliverables created by other Tasks, e.g. T2.1, T2.2, T2.3, T4.4 and T5.2.2.

2.1.3 Requirements processing

The requirements are processed as follows:

1. Collection of requirements and ideas: The raw collection of requirements and ideas, as described previously.

2. Classification and prioritization: This means the combination of similar ideas, identification of dependencies and prioritization based on frequency of the ideas. This step gives the ECC development process its first structure and locates the important points which are in the main focus.

3. Connection between ideas and usage scenarios: Description of the usage scenarios, and their connection to the underlying ideas and tools which will be used to satisfy the requirements

4. Refinement of the time plan: Requires the creation of a time plan while taking into account the prioritization and dependencies.

The abstraction from ideas and requirements to usage scenarios creates a structure for the technical development process and a framework for talking to end users about their requirements and ideas. This supports the agile development process as not all requirements are formalized but their underlying ideas are added to the usage scenarios. While on one hand this abstract requirements approach enables shorter design cycles, more end user involvement during the development and reduces the impact of misunderstandings during the requirements engineering, there is the possibility that important details might get lost or

[8] Joint Activities are an eNOTICE concept of brining different stakeholders together at a training center to observe an exercise, exchange information and network. For more information, see deliverables from WP4.

misunderstood. This will be remedied by constant exchanges with the end users to make sure that the ECC actually meets their needs.

2.2 Workshop Methodology

In the following, different methods for organizing requirements gathering workshops will be presented. These methods have been merged into an eNOTICE workshop methodology and applied during the Joint Activity in Gurcy.

2.2.1 Design Thinking

The design thinking method [Freudenthaler-Mayrhofer and Sposato 2017] is suitable to solve complex problems in various areas. In general, it is important to work analytically, intuitive and iterative. There should be a balance between analytical and an intuitive way of thinking for the solutions to be reliable. Design thinking creates the possibility to develop in-depth knowledge about the a situation and to discover contradictions and mistakes. It leads the participants to be creative and to play with different scenarios [Frisendal 2012].

The method consists of three stages, each including different activities. As shown in Figure 2.2, the first stage is called “Exploration”. Here the participants share insights, organize available information and connect identified possibilities.

The second stage, building on the results of the first stage, is “Ideation”. The main activities of this stage are the creation sketches and scenarios. Participants draw sketches of how they think the product could look like and write scenarios on how the product could be used. Thinking about these two aspects together encoucarges the participants to think about how they would like to use the product and encourages communication amongst them, resulting in a shared vision.

The last stage is “Implementation (of a design)”. This does not mean implementation in a technical sense, but a communication (textualization) of the information previously collected. This can include writing documentation and instructions for the people who want to use the results of the workshop, e.g. to create a technical implementation. Doing this can also force the participants to make design decisions, as they have to think about how their ideas can be used practically.

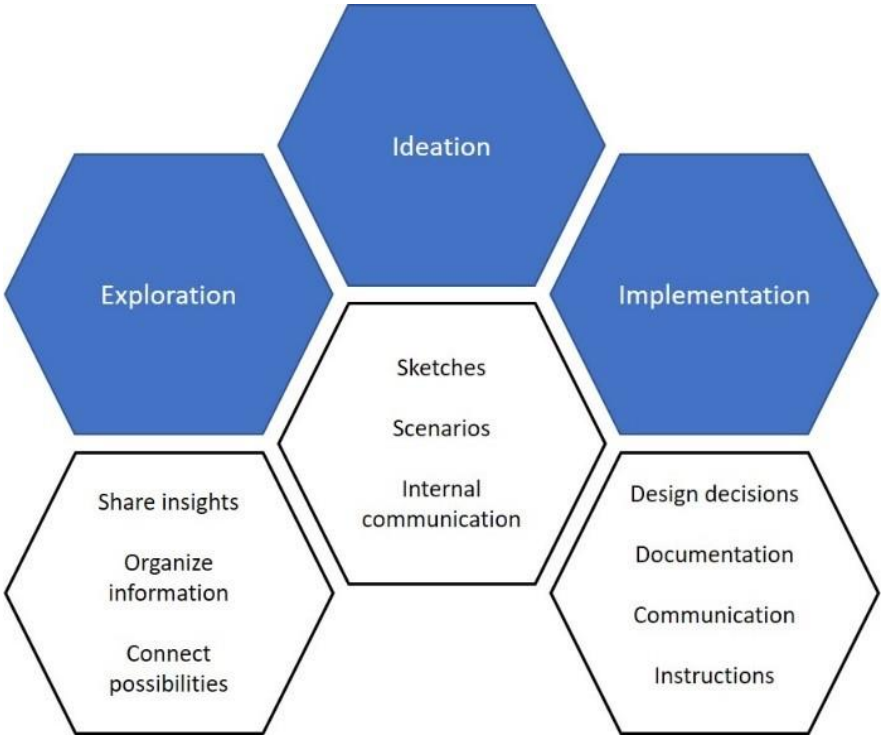

Figure 2.2: Design Thinking

2.2.2 Method 6-3-5 (6 persons - 3 ideas - 5 minutes)

The procedure of the method 6-3-5 [Nöllke 2015] is quite easy. Every participant gets a piece of paper with relevant questions. For the next five or more minutes they are supposed to write down three solutions. Then they pass it on to their respective neighbors. So, everyone gets another piece of paper with three solutions on it. Based on these solutions each participant should find another three solutions during the next period of time. The session is finished when each participant had each paper. (see Figure 2.3)

The participants can get under pressure because they have just little time to find some answers. This might be stressful for some of them, but for others it might be positive stress. Because of the little time they must concentrate on the subject. There is no chance to talk about the proposals or to make no contribution at all in the group. The participants are led to new ways of thinking.

To achieve a good result, the group should not have more than eight participants. There is also the possibility to concretize the solutions after the first step instead of finding new and different solutions. This is more complicated, and the participants might need more time the further the session continues. [Musiol 1981]

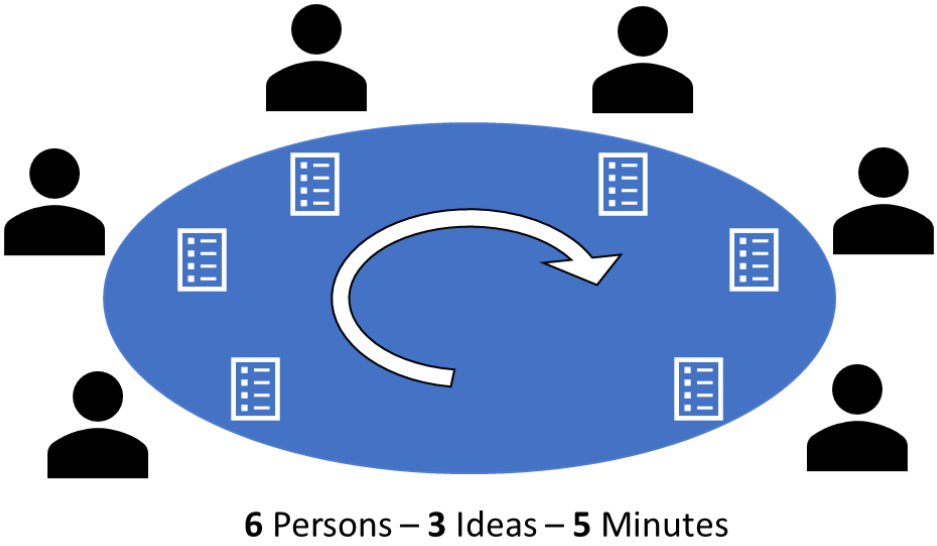

Figure 2.3: 6-3-5 Method

2.2.3 Think-pair-share

With the help of the think-pair-share method [Bönsch 2006] different topics can be worked out. It is applicable for extensive topics as well as for less extensive topics. A main characteristic of this method is that there is a change from individual work to cooperated work. Everyone has to be active.

This method is marked by three different steps. During the first step every participant gets the task and must think about it for him-/herself. They can make notes and prepare to present their results to a partner. That is what they do in the next step. It is called “pair”. Everyone explains their results to one partner, so they can understand and present these as well as their own results. The last step is to share the elaborated results to the group. The results can be discussed and documented. (Figure 2.4)

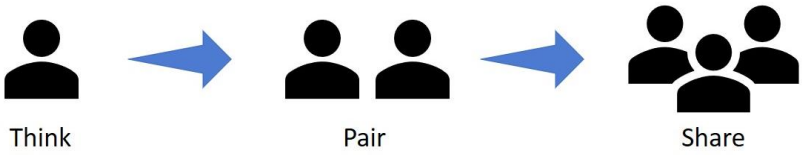

Figure 2.4: Think-Pair-Share

2.2.4 Unified workshop methodology

The three workshop methodologies described previously were combined into one single approach which is shown in Figure 2.5 and works as follows:

First, each participant is given blank worksheets that cover different topics. The participant writes down his or her ideas, questions or anything that comes to mind on the topic on the worksheet. After 15 minutes, the participant selects the worksheet which he or she found most interesting and passed it to the neighbor on the right while receiving the favorite worksheet of the neighbor on the left.

The participant can then check the neighbor's ideas and thoughts on a specific topic and add comments or their own ideas. This sharing process is repeated until nothing more gets added to the worksheets or a predefined amount of times or iterations has passed.

The last step is the only step where participants actually talk with each other. Together they look at worksheets with interesting discussions, contradicting ideas or worksheets that are in any way special or interesting and discuss the content together. This step allows everyone to gain a common understanding of the workshop's result while at the same time discussing the gathered ideas and resolving conflicts.

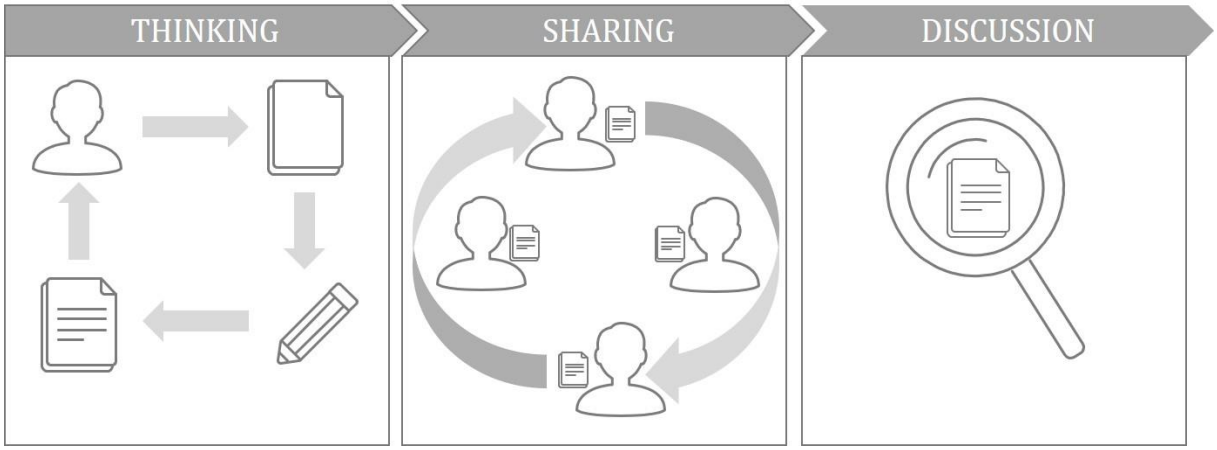

Figure 2.5: Overview of the steps in the unified workshop methodology

2.2.5 Workshop at the Joint Activity in Gurcy

The workshop methodology was applied during a workshop with the eNOTICE partners and invited experts at the Joint Activity in Gurcy. To support the participants, five worksheets were created based on previously identified requirements and ideas. Four worksheets can be found in Figure 2.6, Figure 2.7, Figure 2.8 and Figure 2.9. The fifth worksheet was a blank page where the participants could add anything. They were instructed to follow the methodology described in Section 2.2.4 using the supplied worksheets with the additional instruction that they could edit the worksheets in any way.

The workshop had 13 participants, for example from civil training centers, military training centers and universities. A summary of the results can be found in Section 6.2. The workshop provided valuable input from participants with different user profiles and could thus be repeated at future Joint Activities.

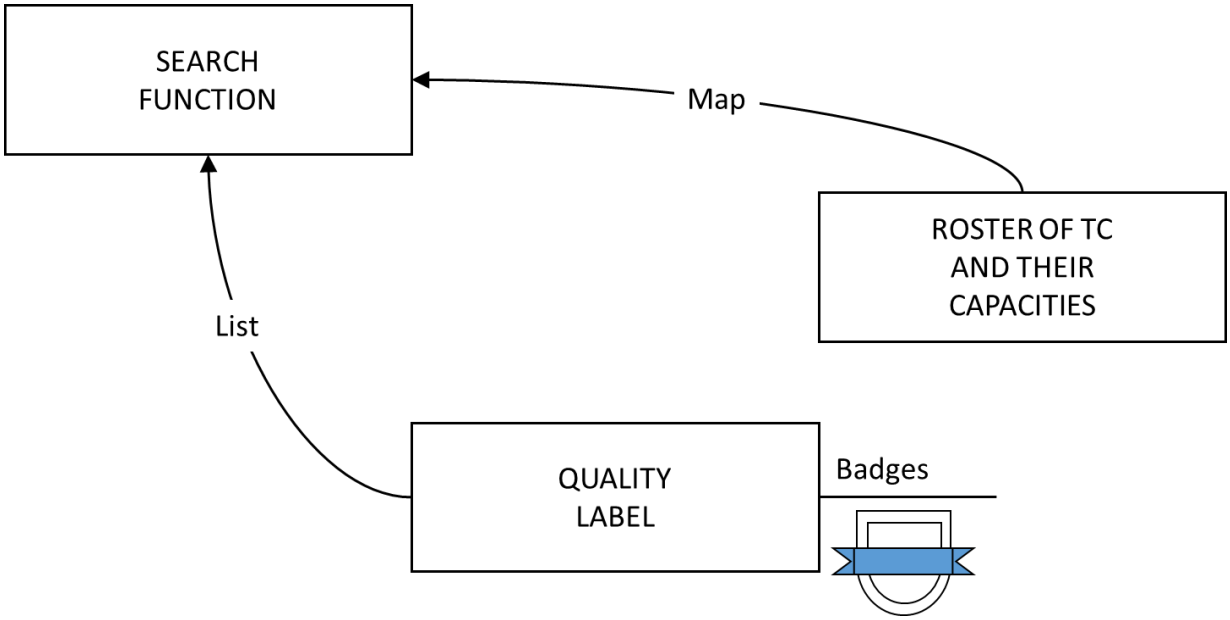

Figure 2.6: The worksheet on the roster

Figure 2.7: The worksheet on pooling and sharing resources

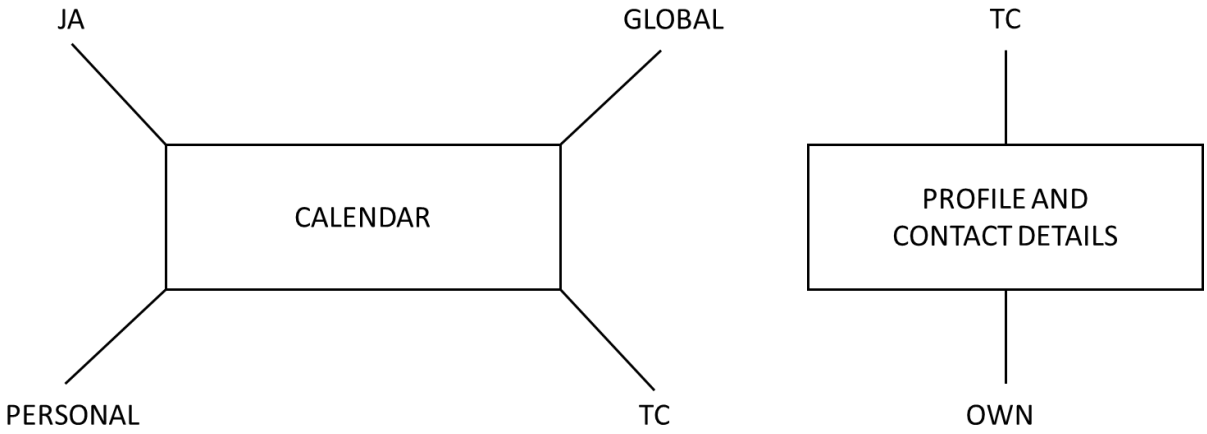

Figure 2.8: The worksheet on calendars and profiles

Figure 2.9: The worksheet on communication and expertise sharing tools

3 Usage scenarios

In this chapter, usage scenarios derived from the requirements analysis will be presented. These usage scenarios are not meant as a definitive or exhaustive list of scenarios in which the ECC could be used, but as a basis for bringing structure into the development process.

The usage scenarios are divided into two groups. The first group is called “Networking” (N1, N2 and N3) and is composed of the activities which take place online. These are: “Visibility of CBRN TC”, “Visibility of end users” and “Share Information & Communication”. The second group is “Joint Activities” (JA1, JA2, and JA3). It consists of three phases which are “Before a Joint Activity”, “During a Joint Activity” and “After a Joint Activity”. The two groups are closely linked with each other, as the “Networking” group can be interpreted as an online version of the “Joint Activity” group. Each usage category will now be presented in more detail, along with some ideas based on the gathered requirements on what activities this usage scenarios can contain.

3.1 Usage scenario N1: Visibility of CBRN TC

The visibility of the CBRN TCs is supported by the platform and especially by the information collected in the roster created in T2.1.1. This information has been provided by the respective TC´s through filling in a survey. Optionally, TCs can also be represented in the ECC with a profile that other members can contact. This approach is shown in Figure 3.1.

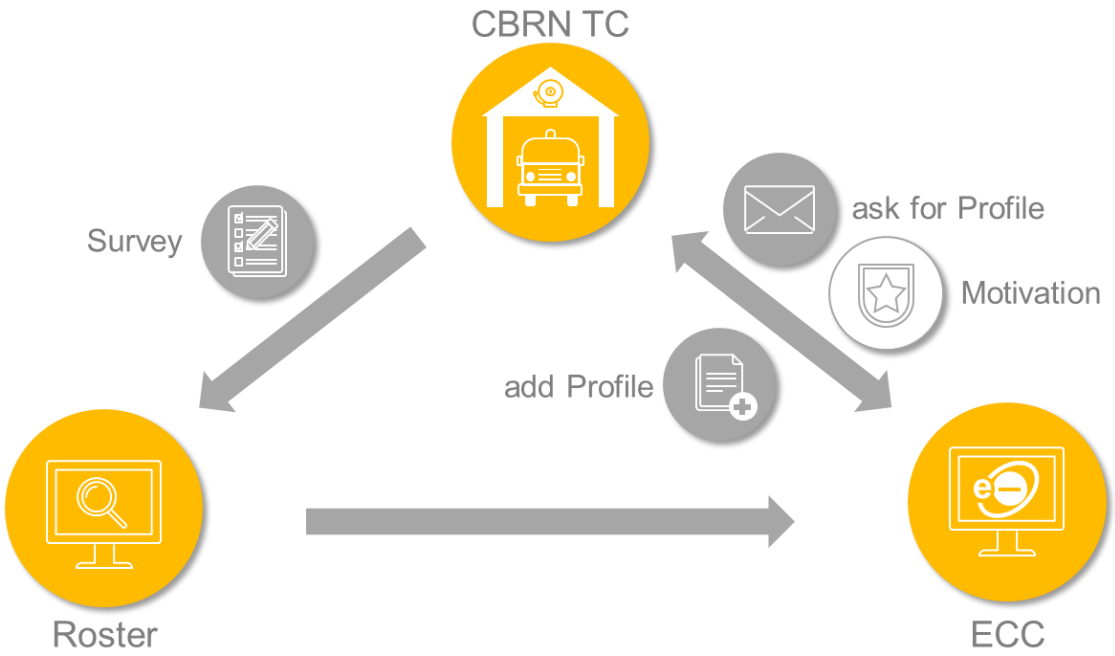

Figure 3.1: Visibility of CBRN TC

3.2 Usage scenario N2: Visibility of End users

To facilitate networking between the users in the ECC, each user has a profile page. The users can update their profile to ensure the topicality and other members can view profiles if permitted to do so, thus creating a basis for networking with each other (see Figure 3.2). The

profiles can contain information tailored to the CBRN domain, e.g. the topics of interest of a specific user.

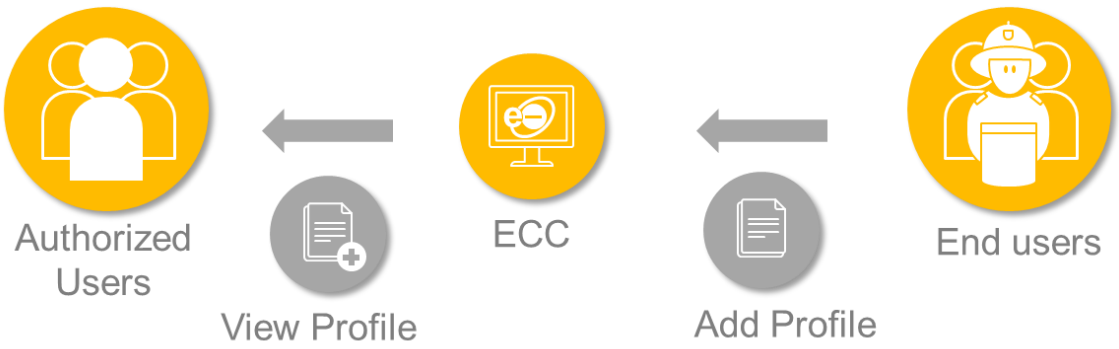

Figure 3.2: Visibility of End users

3.3 Usage scenario N3: Share information and Communicaton

As can be seen in Figure 3.3, the ECC enables the exchange of information. Information can be available through different tools like wikis or communication channels. The search function helps to get the specific information the members of the community are looking for. A user can choose to share information about theselve on their profile page. In addition, there is the possibility to share information in groups and permissions help to restrict the distribution of information so that only authorized users have access to it.

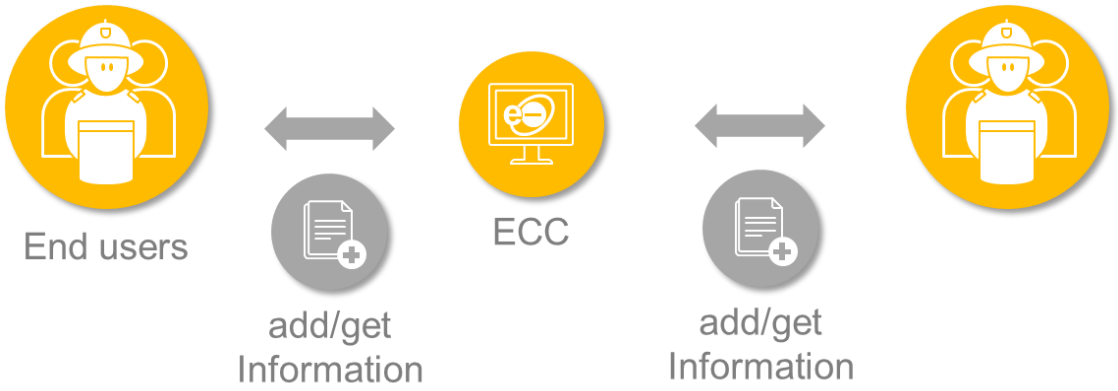

Figure 3.3: Share information and Communication

3.4 Usage scenario JA1: Before a Joint Activity

To find appropriate partners for a Joint Activity, the creator of the Joint Activity can use the Quality Label[9] as well as the Calendar of activities of other end users or TCs (see Figure 3.4). After the creator has found a hosting TC and participants, he can contact them directly in the ECC without the need to search for contact details elsewhere or having to use additional tools.

[9] This is a provision name for the label under development in Task 2.1.2.

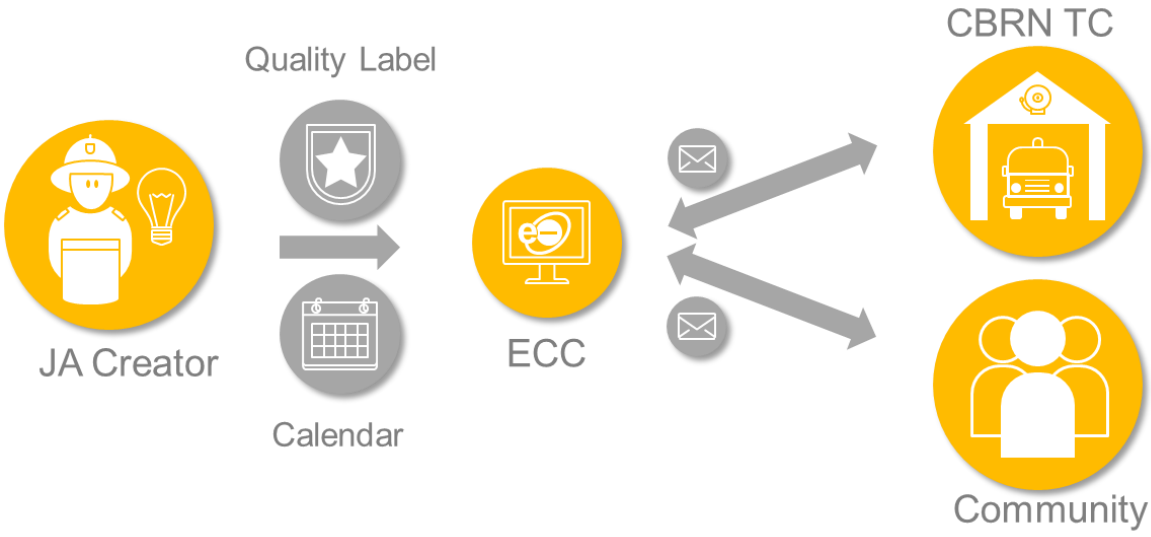

Figure 3.4: Before a Joint Activity

3.5 Usage scenario JA2: During a Joint Activity

As illustrated in Figure 3.5, the ECC could be used to exchange information and to communicate during a Joint Activity. It can allow voice communication with other members of the community and the dissemination of documents or photos of the Joint Activity. The participants of a Joint Activity have access to documents and information at any time when needed, provided they have internet access. This can help to access the lessons learned and the knowledge base during the activity.

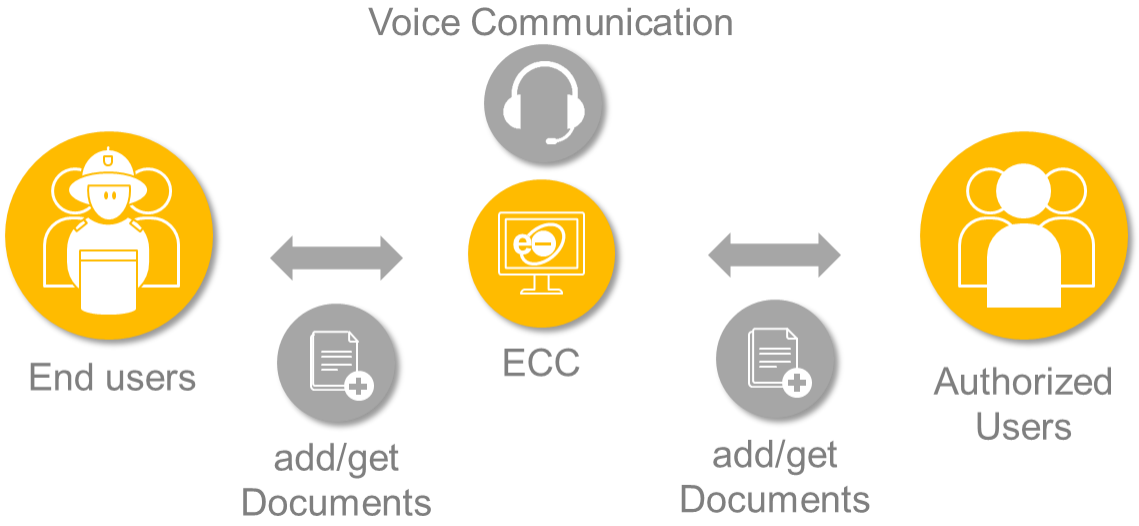

Figure 3.5: During a Joint Activity

3.6 Usage scenario JA3: After a Joint Activity

After a Joint Activity the organizer can add documents and photos of the Joint Activity on the ECC to inform other members of the community about the lessons learned. This does not only apply to participants of the Joint Activity, but also to anyone who is interested and authorized

to access the lessons learned, thus serving as a multiplier for the JA results. Furthermore, the participants can give feedback on the Joint Activity and on the ECC (see Figure 3.6).

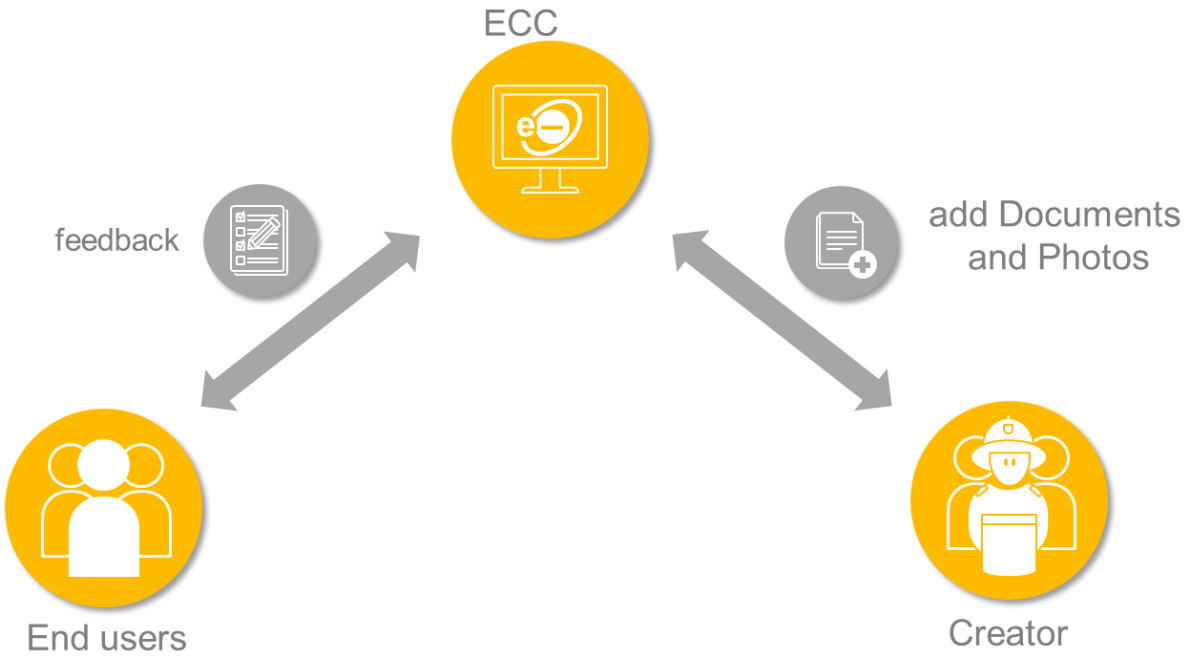

Figure 3.6: After a Joint Activity

4 Realization

In the following chapter, the concept and technical realization of the eNOTICE Community Center will be described.

4.1 Overview

A high-level overview of the architecture of the eNOTICE Community Center is shown in Figure 4.1. Conceptually there are four different types of databases (DB) which are each connected to various tools:

1. The Calendar DB contains all information on calendars
2. The Master DB contains the information form the roster, the TC's labels as well as user's and TC's profiles
3. The Knowledge DB contains all acquired knowledge, i.e. in the form documents or wikis
4. The Communication database contains all communication within the ECC, for example from the chat and forum functions

As there is some overlap between the different databases (a forum can be used for knowledge transfer and for communication) and some tools embed data from other databases (the calendar of a TC could be shown on the TC's profile page), each database is connected with the others.

A search function can access all these databases, making the data contained inside them accessible for the user. Access to these databases is governed by the permissions system, which encompasses all other aspects, and separate areas provide the ability to create e.g. a knowledge DB for each TC individually. In accordance with the appropriate privacy protection and ethics laws, the monitoring tool monitors how the users use the available tools and provides value input on how the tools could be improved and how often they are used.

Whenever desired and possible, the Interface (developed in T3.4) provides access for 3rd parties to the data collected in the databases. The monitoring system monitors and logs activity on the Community Center for future evaluation purposes.

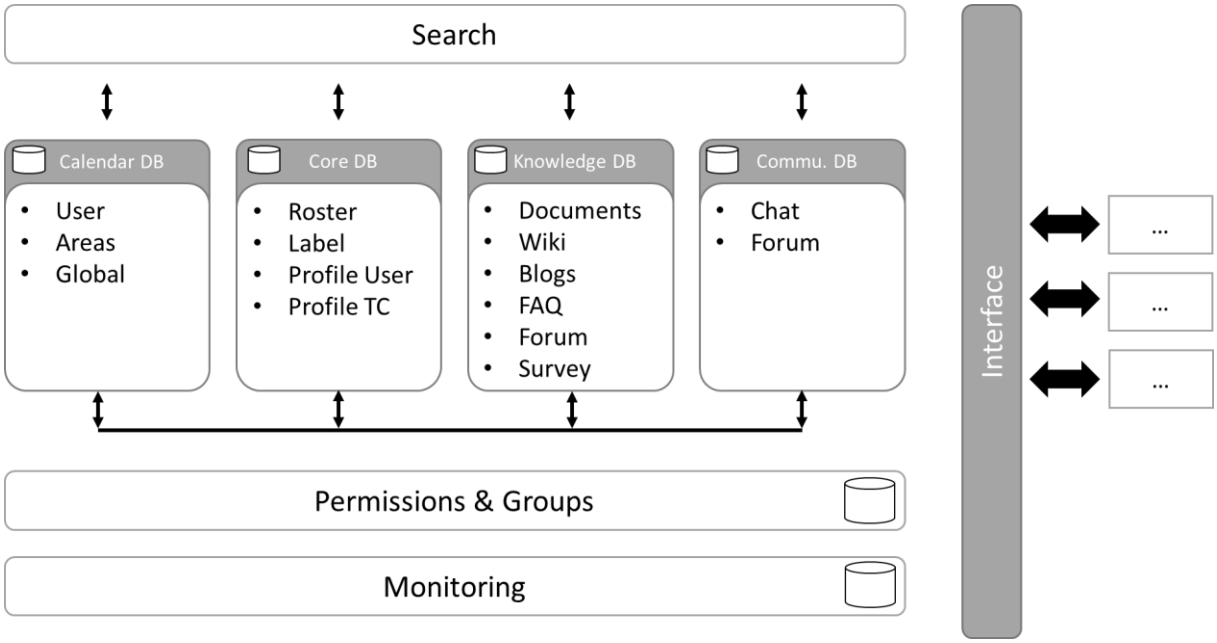

Figure 4.1: The conceptual architecture of the eNOTICE Community Center

4.2 Content Management System

Basic components such as the public website, calendar, roster and profiles are implemented on top of a content management system. Moodle was selected as the content management system as it provides a flexible framework for implementing functionality, is open source software with a long history of updates and maintenance and can integrate the public website seamlessly. Additionally, it is a well known learning management system, so TCs (which are schools to some degree) might already be familiar with using Moodle. When a TC is not already familiar with Moodle, using the ECC makes users aqquinted with it, potentially supporting the TC's eLearning ambitions.

Although Moodle serves as the basic content management system, the functionality implemented on top of it (like the roster) is built modularly using HTML, CSS and JavaScript and can also be embedded into other content management systems.

4.3 Components

Based on the previously defined usage scenarios and the overall system architecture, individual components that satisfy the usage scenarios were derived and will be briefly described in the following.

4.3.1 Roster

The web representation of the roster uses the data gathered in task 2.1 to provide the user with a quick overview of the eNOTICE database of training centers and their facilities. It serves as a starting point for identifying relevant TCs for R&D, training and exercises.

The roster features two main views: list based (depicted in Figure 4.2) and map based (depicted in Figure 4.3).

The list view presents the important features of each TC in a comprehensive overview, allowing the user to quickly gather an overview of the available training centers. This view is sortable by each column.

In contrast to the list view, the map view hides most information of each training center and only depicts its geographical position. Once the user clicks on a marker, he gets additional information such as the name of the training center. He can then use the name to look up detailed information in the table view. Future versions of the eNOTICE Community Center can extend the map view functionality, for example by adding different markers with semantics based on the quality label.

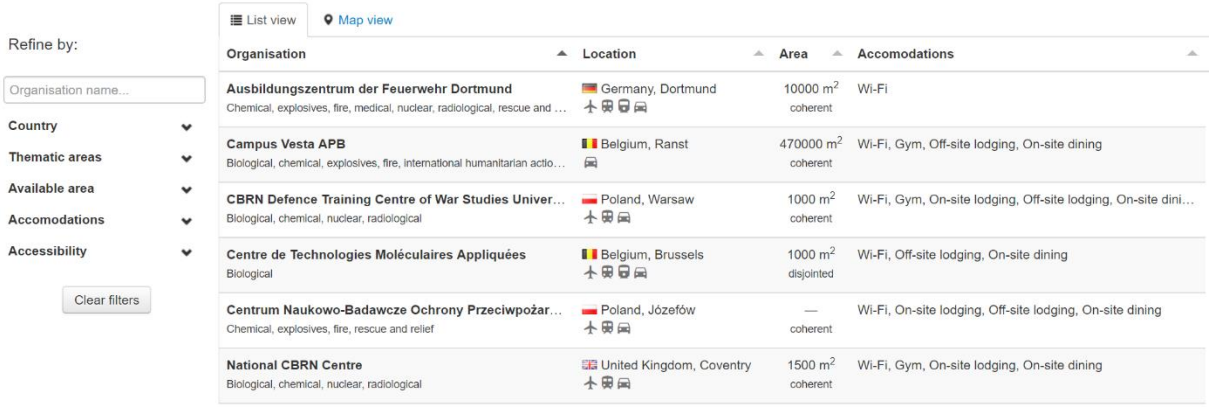

Figure 4.2: The list view of the roster, sorted by country

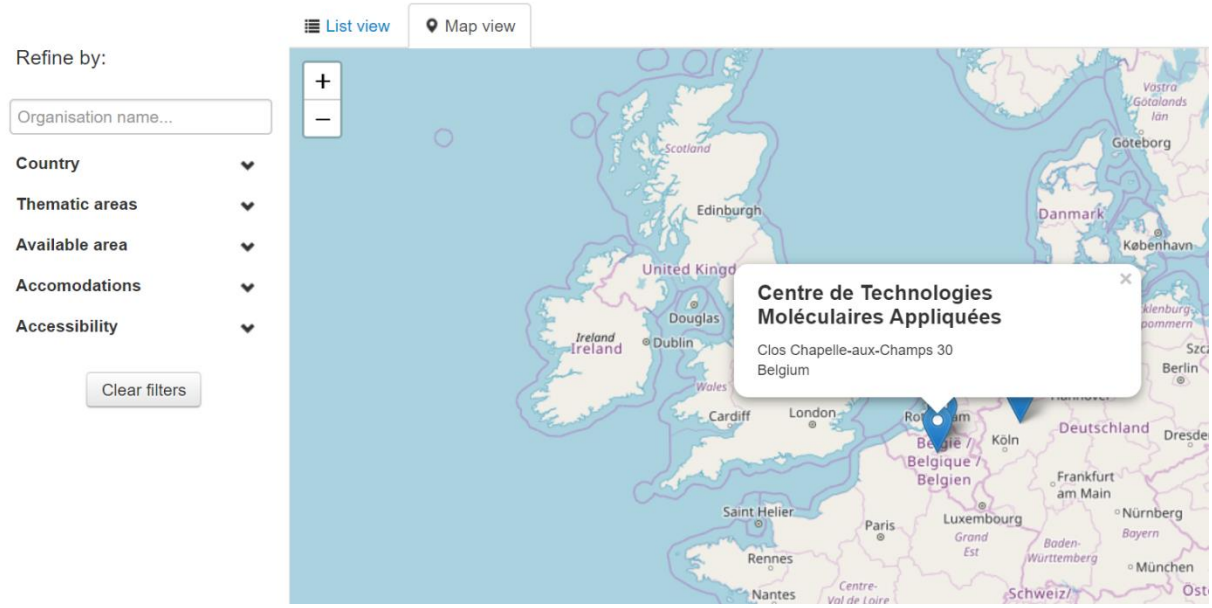

Figure 4.3: The map view of the roster

4.3.2 Capacity/Quality Label

As the report on the quality label (D2.2) will not be available until later, the label could not be integrated into V0 of the eNOTICE Community Center. It has however been considered in the development of the roster web presentation, search function and TC profile page and will be integrated as soon as it is available.

4.3.3 Search function

The search function provides the user with the capability to filter the data shown in the roster, allowing him to search for TCs that meet very specific criteria. The search function can use information from the roster and the quality label to filter the list and map view of the roster simultaneously. Figure 4.4 shows an example of the filter function. The user only wants to find TCs that offer at least Chemical or Biological training and have a Gym and Wi-Fi available. This search query will lead to only the relevant TCs being shown.

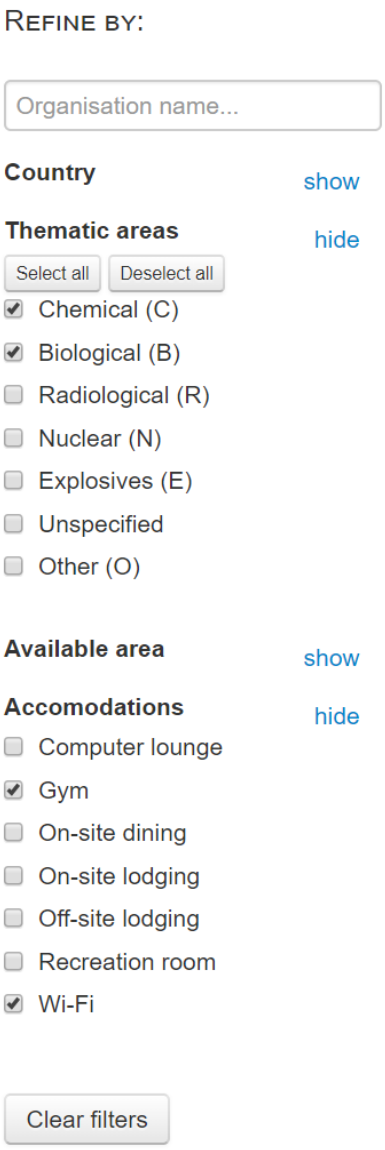

Figure 4.4: Available filters at the search function

The current version of the search function is based on the static data from the roster. Future versions will be able to take into account more data sources, for example the TCs availability based on its calendar.

4.3.4 Areas

Areas are an abstract concept for creating separate and non-public areas within the eNOTICE Community Center. Currently there are two types of areas: Each TC and each Joint Activity is an area and can have an own list of members and own communication and information

sharing tools. Membership of the areas can either be managed by the area members themselves, by an area administrator or by the site administrator.

4.3.5 CBRN TC Profile

The CBRN TC Profile site is part of the roster in V0. It lists all relevant and public information on the training center and gives the user contact details such as the public website or telephone number if provided. A screenshot of a sample TC profile can be seen in Figure 4.5.

Centre de Technologies Moléculaires Appliquées CTMA

Brussels, Belgium Website Email

About the centre

The CTMA is a mixed academic-clinical-military biotechnological platform led by professor Jean-Luc Gala. It implements a network of resources from the Université catholique de Louvain (UCL) and its academic hospital (Cliniques universitaires Saint-Luc, CUSL) and the biological CBRN Defence Laboratories Department from BE-Defence (DLD-Bio). As a technological platform, CTMA provides access and support to use numerous molecular technologies including: quantitative PCR, Sanger sequencing, pyrosequencing and next-generation sequencing (Illumina-Miseq), microarrays facilities (Affymetrix, Agilent, custom glass slide arrays)… — developed through successive projects, and state-of-the-art equipment acquired to fulfil its academic and clinical missions. The multidisciplinary team from CTMA provides a support on different aspects of the research projects from the experimental design until the data analysis and the validation of new devices.

Characteristics

Thematic areas	Biological
Available area	1000 m^2, disjointed
Accessible by	Plane, train, high-speed train, car
On-site parking	Unknown
Accomodations	Wi-Fi, on-site dining
Lodging	Off-site only

Location

Clos Chapelle-aux-Champs 30, 1200 Brussels, Belgium

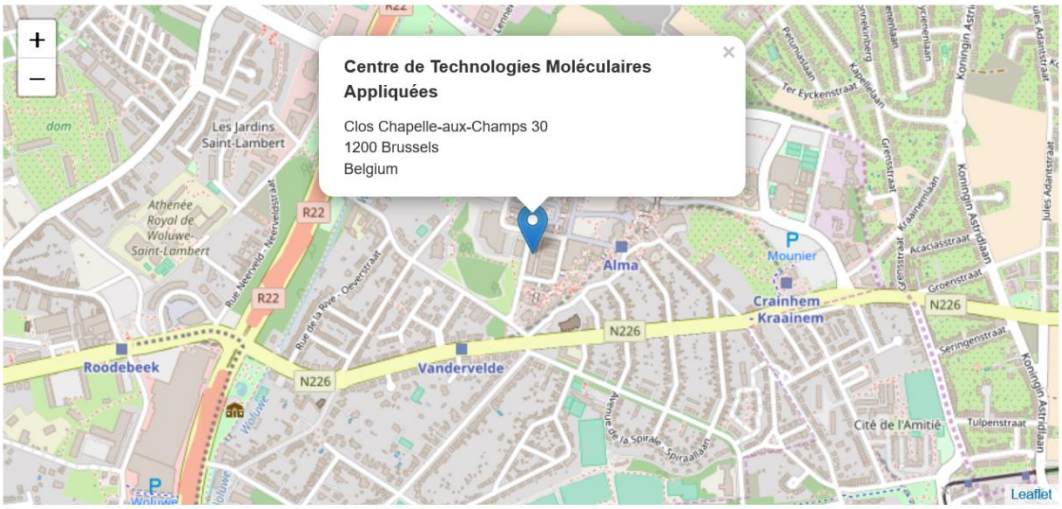

Figure 4.5: An example of a TC profile page

4.3.6 User Profile

User profiles contain at least a username, the user's first and last name and their email address. Additionally, users can upload a profile photo, enter their location, contact data and personal interests. Although currently not linked to a search function, this information can later be used to increase the visibility of end users by making them searchable while taking into account privacy protection rules.

4.3.7 Calendar

There are three types of calendars available in the eNOTICE Community Center.

The first type, the global calendar, has already been implemented as part of the public website (described in D3.4) and contains events that are visible to every website visitor. This includes for example project meetings, dissemination events or scientific conferences where eNOTICE is presented. The possibility for users to propose events for this calendar will be considered, as a common calendar with user-sourced events from the CBRN field could strengthen the network character of the platform.

The second type of calendar is specific to areas (such as TCs and JAs) and can be used by the area administrator to maintain a private list of events that are relevant for the area members. Examples include deadlines for the planning of a joint activity or dates for special exercises within a training center.

The last type of calendar is private for the currently logged in user. The user can use this calendar to maintain and plan private events that should not be visible to anyone else.

Each calendar is exportable in the iCalendar format, allowing users to embed it into existing applications such as Microsoft Outlook or Google Calendar. This export feature also enables potential future integrations of the calendars into other tools in the eNOTICE Community Center such as the search function and the TC profile page.

4.3.8 Survey

As a survey was required in the eNOTICE project well before V0 of the eNOTICE Community Center was ready (i.e. for the roster), UPB analyzed and evaluated different external survey tools in D2.1 as part of task 2.1. The selected tool, EUSurvey, still meets all requirements for a survey tool and will therefore be used to create surveys momentarily. Future versions of the eNOTICE Community Center might include an improved and better integrated survey tool, given that there is sufficient demand.

4.3.9 Information sharing

Users have the option to share information by using area-specific wikis and glossaries. Individual permissions on editing and accessing these information sources can be set on a per-area and per-user basis, ensuring that only authorized users can access sensitive information.

Future versions of the eNOTICE Community Center will include a file exchange system, a collaborative online editor and a search function that is able to search as many information sources as possible with a single search query.

4.3.10 Communication

Users can contact the other user via private messages to exchange information. In addition to simple user-to-user messaging, the chat supports arbitrary chatgroups, i.e. for users with a common interest, for all employees of a TC (depicted in Figure 4.6) or for all visitors of a JA. Participation in this is optional, giving the users the right to share only as much personal information as they want.

The current chat system is rather simple and can be extended in the future, i.e. by switching to the open XMPP protocol, thus supporting an open ecosystem of clients that can connect to the chat. In V1, the chat will be accompanied by additional communication tools. It is planned to add a forum with public and private categories, blogs for each user and a video chat and web conference tool.

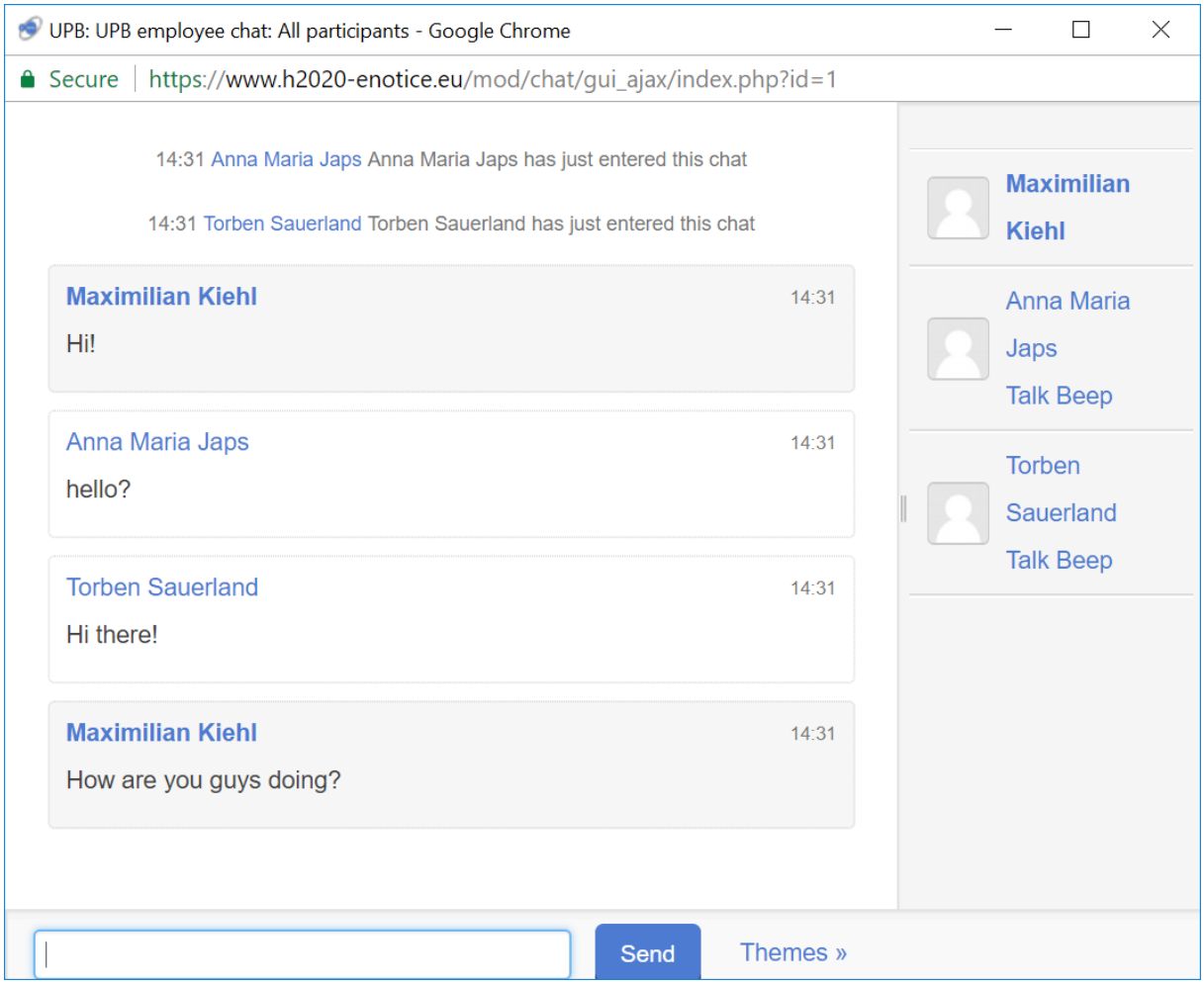

Figure 4.6: A screenshot of a group chat

4.3.11 Dashboard

The dashboard provides the user with a quick overview of current events. It aggregates current calendar events, news and information on who is currently online on the eNOTICE Community Center. The dashboard will be extended to include more information from additional tools as they become available.

4.3.12 Permissions

The selected content management system, Moodle, supports different users, areas, roles for users and fine-granular permissions that can be configured for each user, area and role. One example of such permissions is shown in Figure 4.7. As configuring each permission requires extensive work, reasonable defaults are chosen and can be adjusted if necessary.

Figure 4.7: A small fraction of the permissions that can be configured

User authentication is handled by SafetyID, a system maintained by UPB to allow coherent user profiles across different systems without the user having to register or login into each system separately while still maintaining privacy and security. This flexible authentication system enables a seamless integration of external tools into the eNOTICE community center and could be an important input for Task 3.4 (Integration of other platforms and interfaces).

SafetyID is a combination of open source software for user management (Apereo CAS, PWM and OpenLDAP) and open protocols for authentication (SAML, LDAP, OAuth and CAS). It does not contain any proprietary code or licenses.

4.3.13 Monitoring

As described in D3.4, an analytics tool was already implemented during the creation of the public website. This tool was extended to cover the whole Community Center and will be used during the upcoming usage reports. A short excerpt of a usage report is shown in Figure 4.8, detailing the weekly active users and other metrics.

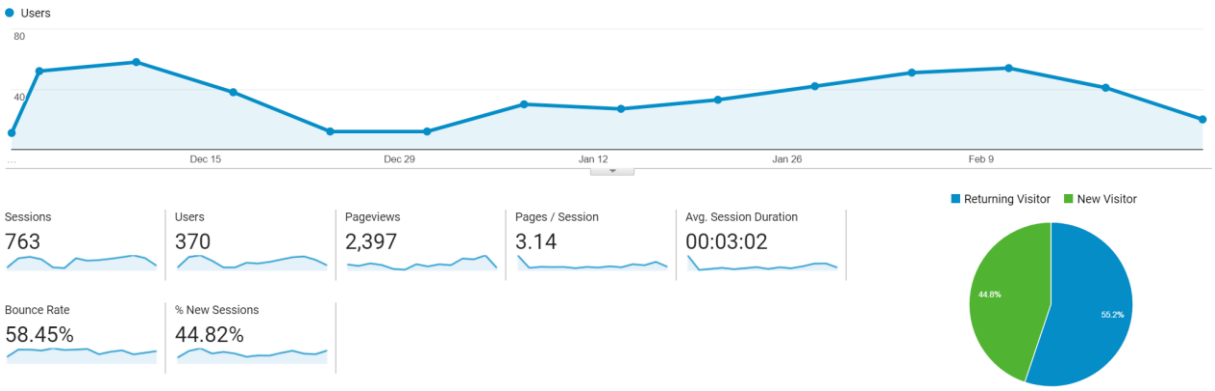

Figure 4.8: User metrics for the time period from the 1st 12 2017 to the 28th of 02 2018

Previously Google Analytics was used as a monitoring tool, but it has since been replaced with the self-hosted open source tool Matomo (formerly Piwiki) to be in compliance with the General Data Protection Regulation (25 May 2018). A privacy policy and opt-out options are provided to each visitor.

4.3.14 Interface

Although the task of integrating other platforms and interfaces does not formally start until M13, some preparatory work was already conducted. Whenever possible, open formats have been used and will be used (i.e. ical for calendar data, VCARD for user contact information and XMPP for chat, WebDAV for files), making potential future integrations easier.

Whenever a new tool is evaluated for use in the eNOTICE Community Center, the support of open data formats is an important criterion and will be considered.

4.3.15 Website

As mentioned in section 4.2, one criterion for the selection of Moodle as the content management system was the integrability of the public website into the Community Center. Technically, the public website is integrated into the content management system so that both systems appear to be one.

4.4 Additional tools

The following section will give a brief outlook on the additional tools that we have looked at and consider integrating into the eNOTICE Community Center. All presented tools are web based, open source and store user data locally.

4.4.1 Discourse

Discourse is a forum software that supports user areas, categories, granular permissions and has a modern user interface. It is therefore an ideal candidate for eNOTICE's forum software as the forum integrated in Moodle was found to be lacking in significant aspects such as usability and flexibility.

4.4.2 Apereo CAS

Apereo CAS[10] is the single sign on software used to implement the SafetyID authentication system. It uses LDAP as a user backend and supports multiple authentication protocols such as CAS, SAML and OAuth. These open protocols enable potential future integrations of the authentication system with other parties while still maintaining the user's privacy. Additionally, Apereo CAS supports 2 factor authentication that can be enabled for increased security when necessary.

Apereo CAS is complimented by PWM[11], a self-service tool allowing users to register with SafetyID and to reset their password.

4.4.3 Sandstorm

Sandstorm[12] is a suite of different web tools, unifying the login and maintenance of the contained tools. It supports SAML and can thus be integrated with SafetyID for a unified authentication experience. Examples of tools supported by Sandstorm include Wekan (a collaborative project management tool) and Etherpad (a collaborative document editor).

4.4.4 Nextcloud

Nextcloud[13], a fork of Owncloud, is mainly a file transfer platform and could be used by the eNOTICE users to share documents, images and videos securely. With features such as the syncing of calendars (via CalDAV) and contacts (via CardDAV), Nextcloud supports open protocols that could also be beneficial for eNOTICE. Additionally, Nextcloud supports video and conference calls[14] and can be integrated with the collaborative document editing suite Collabora Online.

4.4.5 Collabora Online

Collabora Online Development Edition[15] is a self-hosted web site that provides functionality similar to Google Docs. Users can collaboratively edit Word, Excel and PowerPoint documents without having to install software on their computer.

4.4.6 XMPP

As users often are not allowed to access commercial chat services such as Skype or WhatsApp, the open protocol XMPP could provide a viable alternative. Web clients such as JSXC[16] or Converse.js[17] can be integrated into all eNOTICE tools and provide the user with a unified chat experience across apps. A user currently in the forum could chat within his browser with a user who is currently viewing the roster or editing documents in Collabora Online. As XMPP is an open protocol, other platforms could be integrated into this chat system as well.

[10] https://www.apereo.org/projects/cas last accessed 2018-03-21
[11] https://github.com/pwm-project/pwm last accessed 2018-03-21
[12] https://sandstorm.io/ last accessed 2018-03-21
[13] https://nextcloud.com/ last accessed 2018-03-21
[14] https://nextcloud.com/talk/ last accessed 2018-03-21
[15] https://www.collaboraoffice.com/code/ last accessed 2018-03-21
[16] https://www.jsxc.org/ last accessed 2018-03-21
[17] https://conversejs.org/ last accessed 2018-03-21

5 Summary and future work

This chapter will give a short summary of the deliverable and present a brief outlook on future work.

5.1 Summary

The deliverable started with a short introduction. This was followed by an extensive description of the requirements gathering methodology and process. Afterwards, the preliminary results of the requirement gathering process were presented in the form of usage scenarios. Six major usage scenarios were identified and will be used to structure the eNOTICE Community Center development process.

Next, a high-level architecture fulfilling these usage scenarios was created and described. This architecture was used to implement some of the required tools, leading to the basic functionality of the version zero of the eNOTICE Community Center. In the end, more elaborate and powerful tools that could be used in version one of the eNOTICE Community Center were researched and described.

5.2 Future work

Although this document described the requirements gathering process, this process is still ongoing. The eNOTICE Joint Activities will be continuously used to gather input from end users both within the eNOTICE consortium and from external guests.

As mentioned previously, the addition of new tools and ongoing improvements will be a major task in the future. Some of the potential new tools were already presented in Section 4.4 and others might be identified based on additional user requirements or new technology becoming available.

Currently, only the public features of the eNOTICE Community Center (such as a public calendar and web roster) are accessible, as the user registration will be based on results from Task 2.4 (Framework for a sustainable European CBRN TC network), due in M12.

An important aspect to consider is the sustainability of the ECC. Although the development of the ECC has just started and the eNOTICE project will run for another four years, the sustainability of the ECC beyond the runtime of the project has already been considered.

Open source software with a good record of providing updates has been used whenever possible and modifications to this software has been kept to a minimum in order to avoid re-modifying the used software every time it is updated.

Ideas for monetization beyond eNOTICE will be explored and detailed in future reports with the ultimate goal of creating a self-sustaining platform.

This deliverable does not contain any evaluation. This is deliberate, as yearly evaluations of the functioning of the eNOTICE web platform are contained in WP5. Further evaluations will include the deliverable D3.8 on the V1 of the eNOTICE web platform (due in M24) and six-monthly reports on the use of the eNOTICE platform (starting in M30, WP3).

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6 Annex

6.1 Results of the Master Thesis survey

Source for all content in this Section: [Schultz 2017]

6.1.1 Question 1

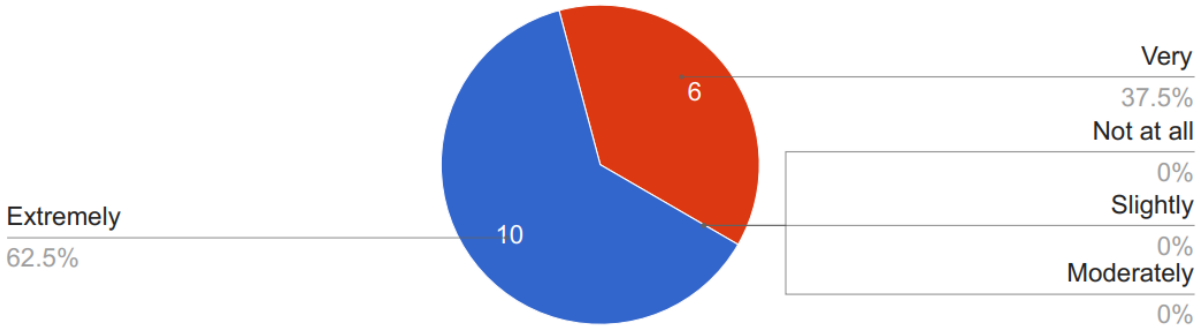

Figure 6.1: How important do you think is the exchange with other stakeholders from the area of CBRNe?

6.1.2 Question 2

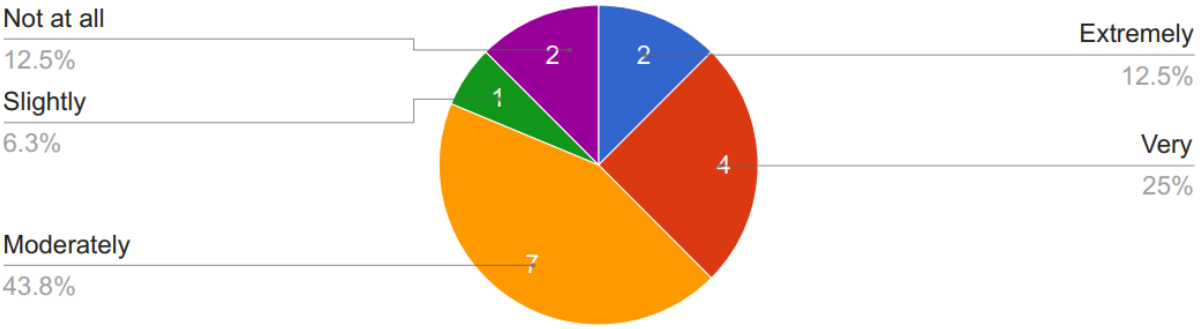

Figure 6.2: How important do you think is the translation of the platform into other languages than English?

6.1.3 Question 3

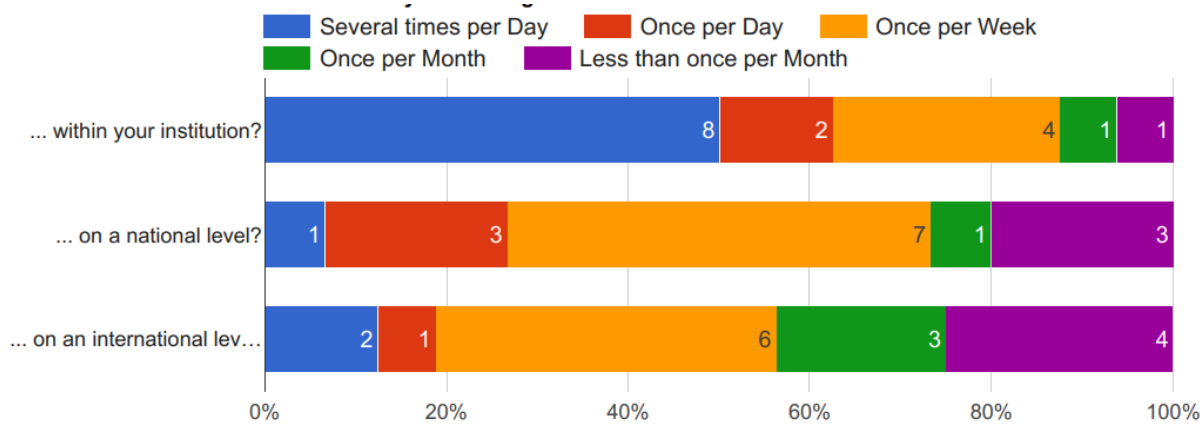

Figure 6.3: How often do you exchange with other stakeholders from the area of CBRNe ...

6.1.4 Question 4

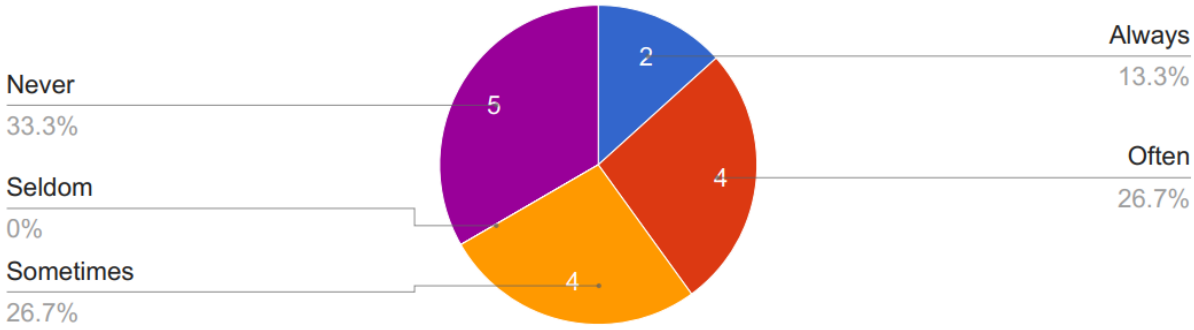

Figure 6.4: Do you already use tools to collaborate with other people within your organisation?

6.1.5 Question 5

If so, please name the tools and the features you use the most:

- "common data storage, data banks on lotus notes base"
- "SharePoint"
- "I am not sure I understand the question; tools to collaborate such as? what do you mean by collaboration? sharing documents?"
- "Live talk Phone Mail Skype message, in that order"
- "E-mail Dropbox Intranet"
- "Dropbox, Unity Collaboration, Skype, Trello"
- "International Master Courses in 'Protetion against CBRNe events', Research activities in detection and Identification of Chemical and Biological Agents"
- "WEBEX"
- "hpac nbc Analisys Outlook"
- "sharepoint based applications; a self-developed Knowledge Base (semantical linking based on CBRN ontology); file-sharing portals document exchange, information retrieval, support of formal work processes"
- "an internal website, dedicated only to the workers of my organisation (nobody from the outside of the organisatiion cannot access it)"

6.1.6 Question 6

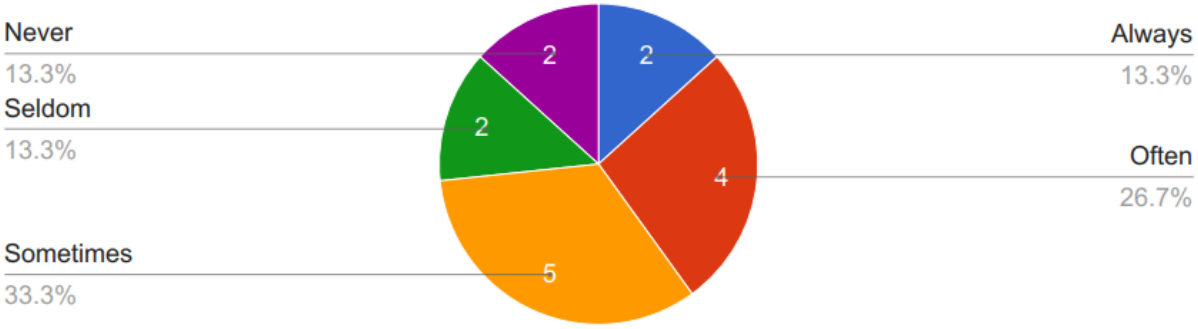

Figure 6.5: Do you already use tools to collaborate with other people from other organisations?

6.1.7 Question 7

If so, please name the tools and the features you use the most:

- "sharepoint, bscw, basecamp"
- "SharePoint, projects websites, such as, e.g. ENCIRCLE Cluster website"
- "Idem,"
- "ECAS portal"
- "Mail Skype talk or message Phone In the order above..."
- "E-mail Dropbox"
- "Dropbox, Google Drive, Skype"
- "e-mail, sharepoint"
- "e-mail, meetings"
- "WEBEX, VTC"
- "outlook nbc Analisys"
- "government website where agreed members can share files reports etc"
- "sharepoint based applications; a self-developed Knowledge Base (semantical linking based on CBRN ontology); file-sharing portals document exchange, information retrieval, support of formal work processes"
- "GoToMeeting"

6.1.8 Question 8

In which situations do you use tools to collaborate?

- "praparation, every-day work"
- "n/a"

- "to store and share documents. websites - to know news, information, about events, online registration for events. For collaborative tools presuming contribution of all - introduce inputs of my organisation to the joint catalogue, or community resource"
- "Searching for Project Partners,"
- "When I want their view If I have questions When I need practical or operational input When I need help"
- "Sharing the most recent versions of tasks. Exchanging feedback etc."
- "Writing articles, sharing project videos and images, writing code"
- "to exchange an information, to store some data"
- "Didactical, trainings and research activities"
- "Virtual meetings"
- "training Emergency Simulation"
- "for major incidents we can share maps/plans etc. for testing and exercising we share agenda/minutes and workbooks."
- "preparation, execution, evaluation of conferences, exercises developing and executing yearly programmes of work synchronizing work along formal workflowprocesses provision of expertise to customers outside our Centre"
- "teleconferences within international projects"

6.1.9 Question 9

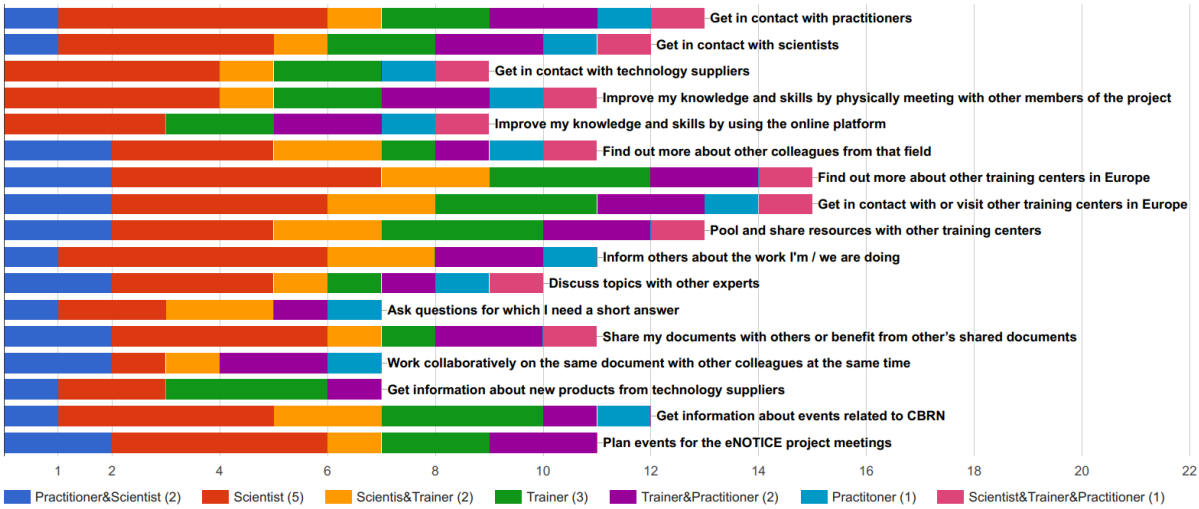

Figure 6.6: What do you think will be your reasons to use the eNOTICE platform? (multiple answers possible)

6.1.10 Question 10

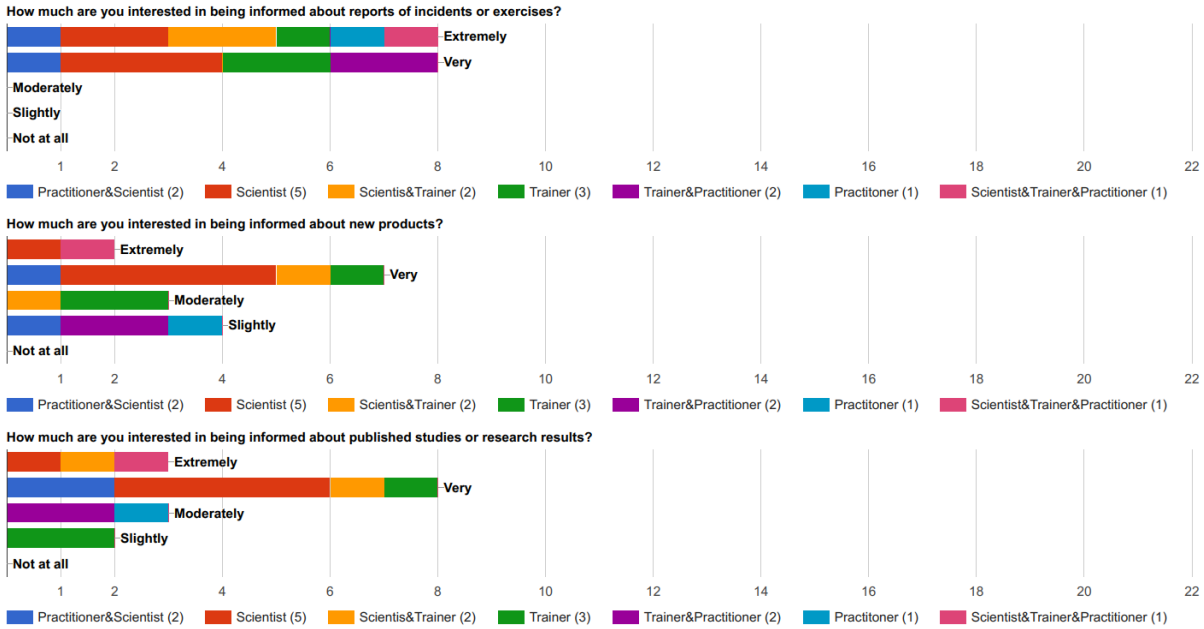

Figure 6.7: Combined answers to question 10

6.1.11 Question 11

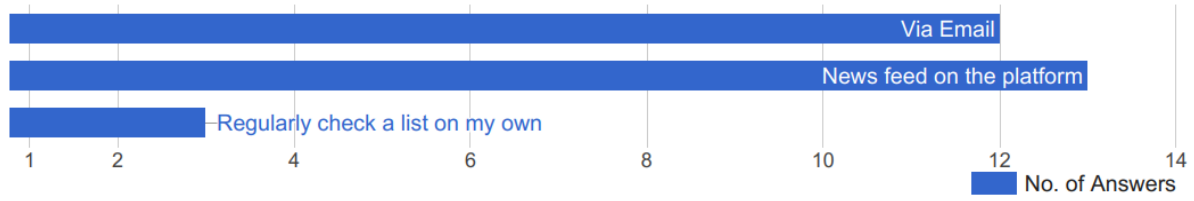

Figure 6.8: If so, how do you want to get this information? (multiple answers possible)

6.1.12 Question 12

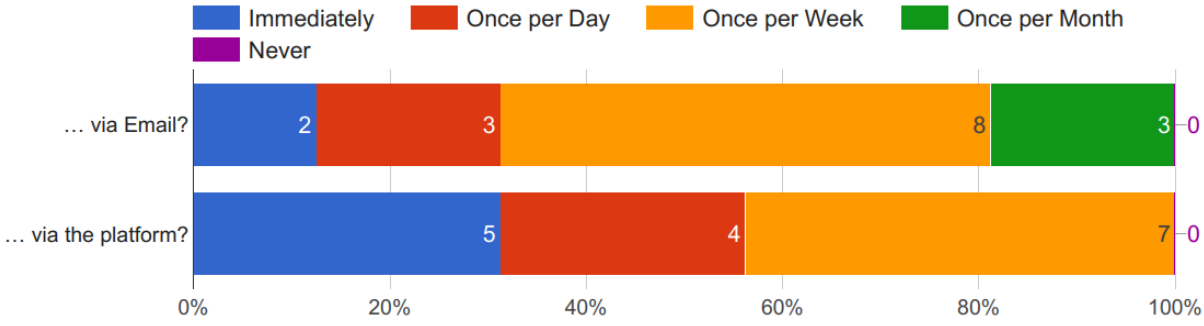

Figure 6.9: How often do you want to be informed about news/changes …

6.1.13 Question 13

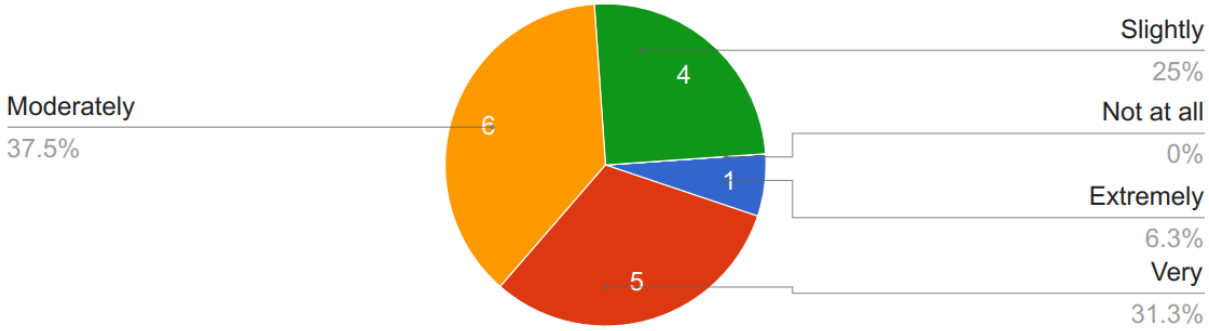

Figure 6.10: How familiar are you with using online platforms?

6.1.14 Question 14

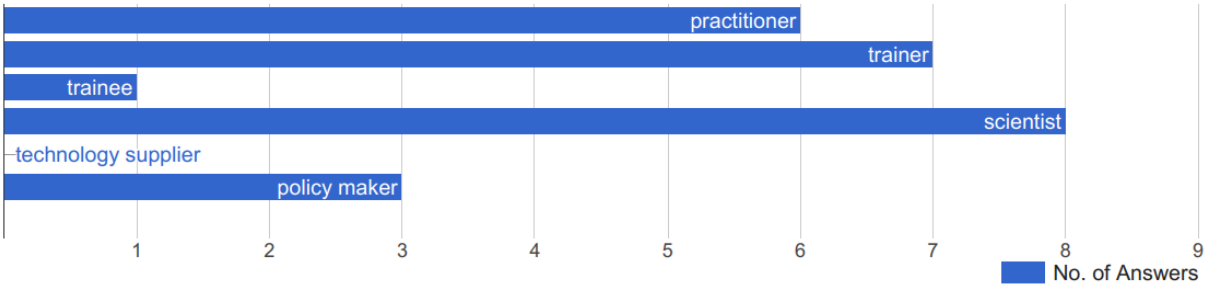

Figure 6.11: To which user area(s) do you belong? (multiple answers possible)

6.1.15 Question 15

How would you describe your task in your organisation with a few words?

- "cbrn incident commander"
- "Manage the provision of quality CBRN advice and support to the wider law enforcement community at Operational, Tactical and National/Strategic level."
- "research in the field of knowledge engineering, semantic technologies, project management"
- "I am research coordinator at a Training Centre but I am also part time academic"
- "Researcher and support to didactic management of post graduating courses and training"
- "Manager for a research centre at a university."
- "Assist in various research projects."
- "I am an assistant professor and researcher"
- "to plan current activity, develop new curriculum of training"
- "Researcher"
- "Training and education policy maker,Exs support , courses for NATO"

- "specialist support to first responders"
- "Deputy Director"
- "I deal with the area of implementing new technologies into emergency management plans as well as I support other researches with the administrative part of their work"

6.1.16 Question 16

Do you have further ideas or comments for the platform?

- "It must differentiate between 'Defence CBRN' (Military) and Civil CBRN. It must be operationally focussed primarily as well as having technical/academic elements"
- "Main requirement - make it simple and useful for end users! only then they will use it. Thank you for your work"
- "Calender of activities of Training Centres Userfriendly overview of thematic topics such as research, activities, ..."
- "the platform shoul dinamically guide the users to define their training path"
- "possibility to store in one place all related documents connected with CBRN training, expert forum"
- "Not now"
- "no thank you"
- "it should provide intuitive handling and have quick reaction times it should support processes and workflows rather than formalize them"
- "I hope it will be easy to use and intuitive"

6.2 Summary of the workshop in Gurcy

6.2.1 Quality label

- Goal of exercise/teaming; participants (military, civilian (branches)); role in exercise
- Data protection capability
- Live agent training
- On-site integrated activity hosting
- **eNOTICE emblem badges to wear at JA to show we are consortium**

6.2.2 Search function

- Different functions: simple search, complex search
- Marking interests →"automatic" overview of opportunities for collaboration
- Search on: CBRN, accommodation, country, EU track record, profile (TC, expert,…)

- **"fuzzy search"** to cope with types or different technical terms
- **Filters and categories**: Age, work, country, are you available to attend training in a different country, training activities requested

6.2.3 Roster of TC and their capacities

- **Military**/civilian limitation of sharing information
- Simultaneous result of the search = quality + label = roster
- Means of transportation to/from the TC
- Average **cost** of accommodation in or around the TC
- Specialization of the TC
- **Is it national or international TC**
- Civil? Military? Joint?
- **Academical institute or also with practical training?**
- **Location**
- Time frame of training
- To depart from what the TC´s would like to "advertise"
- **Name plates**

6.2.4 Pool and share resources

- Experience, Documents, **Best practices**
- Looking for partners for exercises, making areas instead of developing everything alone
- Web platform gives a list of ideas to share and pool
- Type of training (books, etc.)
- **Means used for training** (any PC programs)
- Standard for training (sops, etc.)
- Infrastructure, equipment, personnel instructions, consumables
- Procedures, **handbooks**
- Common language → technical terms
- Certificates, quality assurance
- Maps, PPE examples, new and emerging threats

- **Key coded to indicate interest** → profile for each member where they can mark their interest and receive relevant information of them
- FAQ and forum areas
- Activities eligible to open up → **overview/calendar of what is going to be organized in the next month** (also the eventual opportunity to loan a facility)
- Products, exercises, guidelines, recommendations, **feedback from training**
- Webpages of TC´s, contact emails from TC´s, project calendar, project photos, project publications, videos from JA
- Enough person to discuss

6.2.5 Calendar

- Importability (to outlook, google calendar, etc.)
- Cascading calendars (hierarchy), connected to resource planning
- Calendar linked to the search function
- + Expo´s, + Telco

6.2.5.1 Global

- ?
- EU
- Leads to other website
- ✓

6.2.5.2 Training Center

- Main **activities** (courses, conferences, workshops)
- ✓

6.2.5.3 Joint Activity

- ✓
- ✓

6.2.5.4 Personal

- How to do in time → connection to project planning
- ?
- Not clear

6.2.6 Profile and contact details

- And an area with the end users feedbacks

6.2.6.1 Own

- Importable, exportable (standard data format)
- Good for changes in the project
- references

6.2.6.2 Training Center

- ✓
- Just a few people that is going to be engaged in the network pulls it´s organization in
- Standards

6.2.7 Communication

- Pin board (virtual): more intuitive than forum?
- News blog: results sorted by date → most current issues might have higher relevance
- Platform: link to the official website
- Feedback section
- Who will monitor the platform? → can´t leave an enquiry unanswered
- News articles – global interest
- Telco

6.2.7.1 Forum

- +
- ✓
- ✓
- Yes
- For users and consortium
- Project leaders

6.2.7.2 Chat

- +
- Who will be behind the chat?
- ✓
- ✓
- no, needs synchronized time planning, just like Telco´s
- Chat function for each TC?

- workshops

6.2.7.3 Wiki

- Who does it? Who has oversight? Who provides quality assurance?
- -
- materias

6.2.8 Means for sharing expertise and best practices

- **Email** short info
- **Website**
- Means?
- Cloud
- Own contacts
- Articles: nations, Eu, local
- Meetings: partners
- Exhibitions

6.2.9 Other ideas

- It must be clear what a TC can offer that other TC´s cannot
- **Info about JA´s in every TC of the consortium – videos, pictures, results**
- Possibly? – enable other TC´s also share their info on the platform – exercises specificities
- We must find a common language among all the participant members and TCs
- Text and media can be made balanced and divided into subsections