TRAIN4 SUSTAIN

Establishing future-oriented training and qualification quality standards for fostering a broad uptake of sustainable energy skills in the European construction sector

Report on platform implementation and launch

Project no.   894514

Project acronym: TRAIN4SUSTAIN

Project title: Establishing future-oriented training and qualification quality standards for fostering a broad uptake of sustainable energy skills in the European construction sector

Call: LC-SC3-EE-3-2019-2020

Start date of project: 01.05.2020.

Duration: 30 months

Deliverable ID: D3.2

Due date of deliverable: 30 June 2021

Organisation name of lead contractor for this deliverable: Geonardo

1. table

Name of Author(s)	Organization(s)
Bese Pál	Geonardo
Peter Gyuris	Geonardo

2 table

Dissemination level		
PU	**Public**	
CO	Confidential, restricted under conditions set out in Model Grant Agreement	

3. table

Document history			
Version	Date	Reason	Revised by
01	23/06/2021	ToC	Geonardo
02	30/06/2021	Final	Geonardo

Table of Contents

1 Summary

The Platform, aka the *European Skills Registry* is a major outcome of the TRAIN4SUSTAIN (T4S) project. Via the implemented main features, that are also detailed later in this report, it is ready for launching in its first version.

The Platform is a web application with functions related to competences and qualification of building professionals, based on the *T4S* Competence Quality Standard (CQS). The T4S CQS and the Platform, developed respectively in WP2 and WP3, enable to issue the Skills Passport. These above-mentioned tools can facilitate stakeholder interactions and support the promotion of sustainable energy skills in the construction sector. Market players, both on the demand (investors) and supply (companies, building professionals) side should better find each other in EU MSs and regionally, by matching the required and achieved competences of their training and through professional experiences.

2 Introduction

2.1 Purpose of this document

This document summarises the progress of the software development under the Task 3.2 (*T3.2 Implementation of Platform and the implementation of sub modules*) carried out by Geonardo. It also provides overview of planned developments to be done within the duration of the task, as well as about components that were defined in *D3.1* and subject of Task 3.3 (*T3.3 E-inventory for training courses, e-learning material and best-practices provided through eLearning and help- desk to support the EU capacity building*) and Task 3.4 (*T3.4 Third party tool interfaces and plugins for enriching content*).

2.2 References

- European Skills Registry
- D3.1 - Report on use cases and the specification of the platform

3 Definitions, acronyms and abbreviations

API	Application programming interface
BUS	BuildUpSkills
CMS	Content Management System
CNAME	Canonical Name
CQS	T4S Competence Quality Standard
ESR	European Skills Registry

GDPR	General Data Protection Regulation
JSON	JavaScript Object Notation
LAMP	Linux, Apache, MySQL, PHP
LTS	Long Term Support
MVC	Model-view-controller
PDF	Portable Document Format
PRTG	Paessler Router Traffic Grapher
QR code	Quick Response code
REST	Representational state transfer
RSA	Rivest–Shamir–Adleman encryption algorithm
T4S	TRAIN4SUSTAIN
XLSX	Office Open XML
XML	eXtensible Markup Language
YAML	YAML Ain't Markup Language
cURL	Command line tool and library for transferring data

Table 1 Definitions and abbreviations

4 European Skills Registry

4.1 Overview

At its current status the application supports the following main activities:

1. *Skills Comparison Tool*: Comparing various qualification schemes and learning outcomes on the basis of the common competence quality standard
2. *Scheme Evaluation Tool*: Mapping existing qualification schemes and curricula in terms of learning outcomes
3. *Skills Passport*: evaluating achieved national qualifications of professionals in the field of sustainable energy skills
4. *Match-making Hub*:
   - Searching for qualified experts fulfilling certain criteria with regards to competences, comparing their qualification level to national standards and contacting them via the Platform's internal communication panel
   - Publishing projects that require experts with skills in the field of sustainable energy

4.2 General implementation details

The Platform is based on *nGrosser*, which is the *CMS* solution running on the *nJinn* framework. *nJinn* is a PHP-based, lightweight, high-performance, general purpose application programming framework developed by Geonardo. It supports the role-based user management and access rule evaluation, data

abstraction, contains libraries for process standard protocols and data formats, resources required for the *MVC* software design pattern.

Specific features of the Platform are implemented as extension modules.

4.2.1 Environment

The application is hosted on *LAMP* environment; currently running the following software:

Software	Version
Ubuntu Linux	20.04
Apache	2.4
PHP	7.4
MySQL	5.7

Table 2 Software versions

The server, which hosts the virtual machine running the application, is equipped with 192GB RAM, 55GHz CPU and 12TB storage capacity. Dedication of additional hardware resources is not yes foreseen as the system does not require it at the moment.

Geonardo's server park is located in Budapest and has 500 Mbit/s dedicated bandwidth that suits the current purposes and expected to do so during the first years.

4.3 Launching the platform

The first version of the application has been published under the subdomain of esr.train4sustain.eu. Other domains can refer to it as *CNAME*, which will be considered later.

The goal was to have all the crucial functions of the final version up and running, allowing wider audience to access the Platform and integrate their feedbacks within the duration of Task 3.2.

4.3.1 Design and visual identity
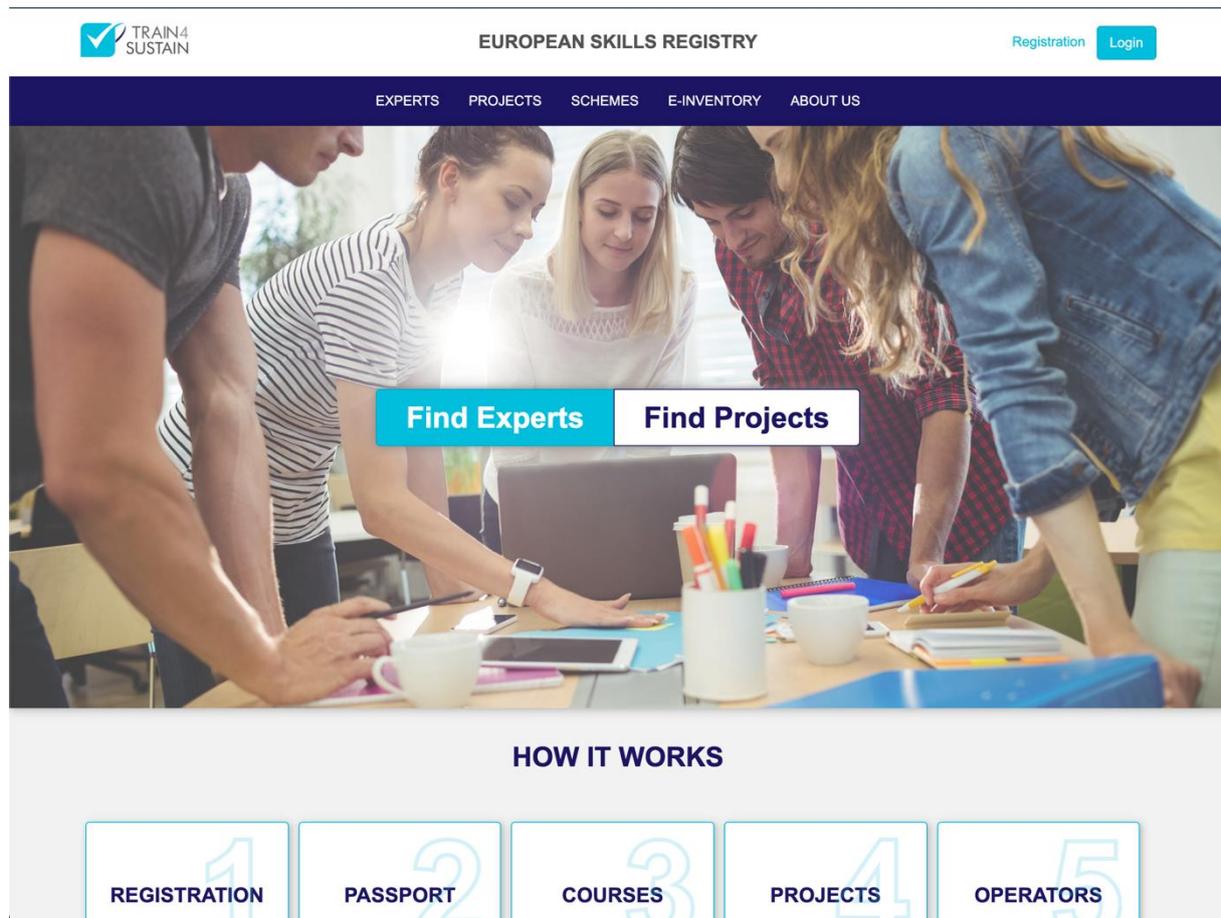
Figure 1 ESR home screen

The Platform design follows the *T4S* general visual guideline while incorporating the colour scheme originally assigned to different *CQS* dimensions.
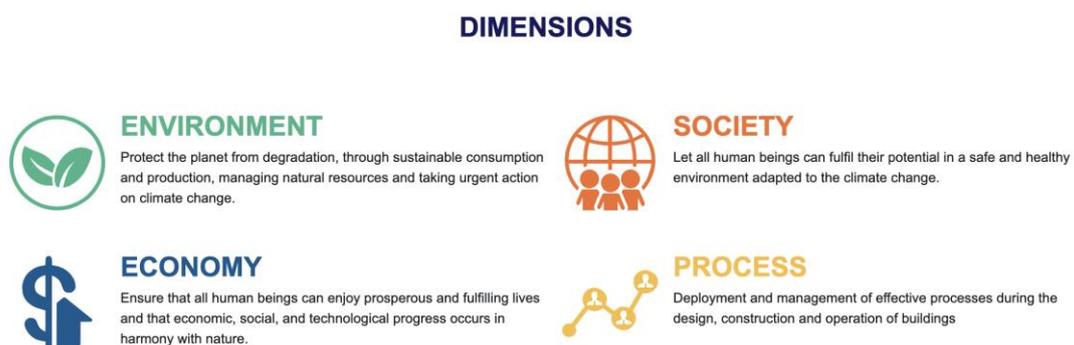
Figure 2 CQS Dimensions

4.3.2 Registration and user profile

Registering an account is open to everyone and requires minimum amount of data to be entered: first name, last name and email address. These data will

be stored by the Platform hence subject of *GDPR* and the user needs to read and accept the privacy policy first.
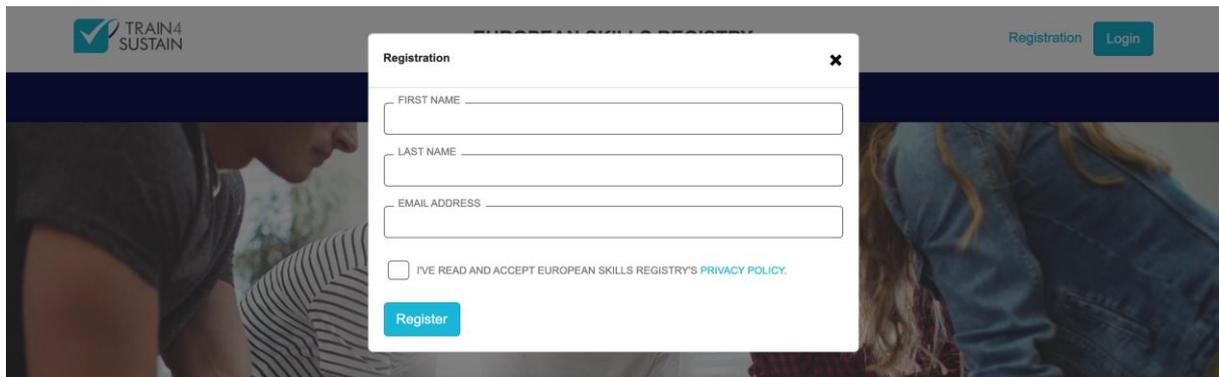
Figure 3 Simplified ESR registration form

After submitting the basic personal information a confirmation email is sent to the given email account containing a custom link that can be used to verify it.

Logged in users can navigate to their profile by clicking on the *Profile* button on right end of the header. Alternatively, using the split button, one can navigate to the specific section of their profile.

Figure 4 Accessing the profile

4.3.2.1   Passport

The T4S Passport is a key concept on the Platform. To express this, the Passport is displayed on the user's own profile by default.

The level of competences achieved in certain area of expertise are calculated by evaluating the completed courses against the *CQS*.
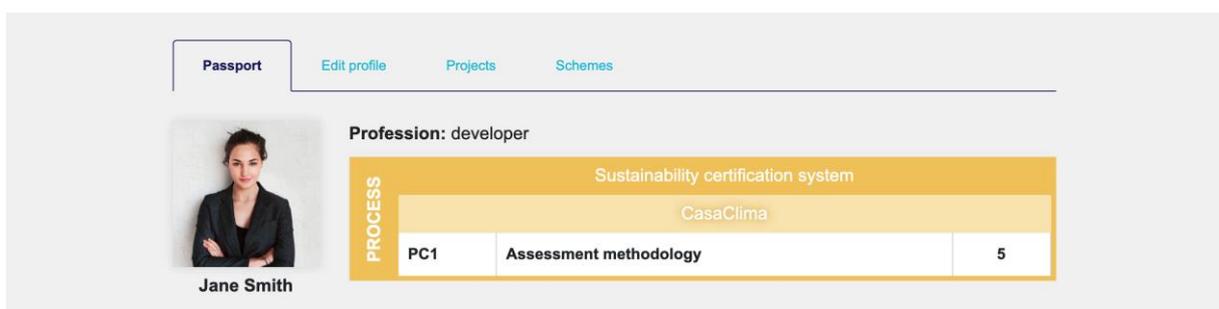
Figure 5 Skills passport under own profile

7

4.3.2.2 Edit profile

On the second tab of the user profile one can customise and complete it. Details, such as general personal data, contact information, language skills, education and work experiences, can optionally be specified.
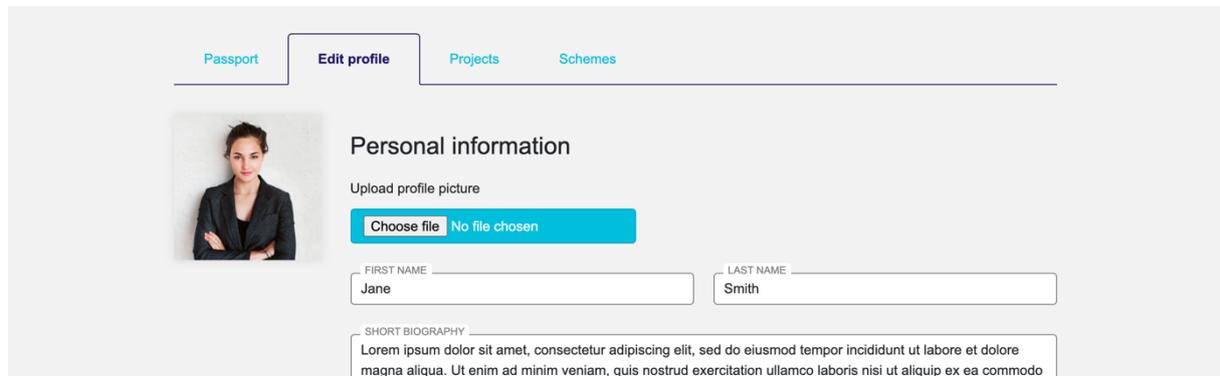
Figure 6 Editing profile details

One can apply for becoming scheme operator by submitting the corresponding form. Administrators then can approve this request allowing the user in question to manage selected qualification schemes.

4.3.2.3 Projects

Under the section of *Projects*, the Platform lists all the projects that have been created by the current user.
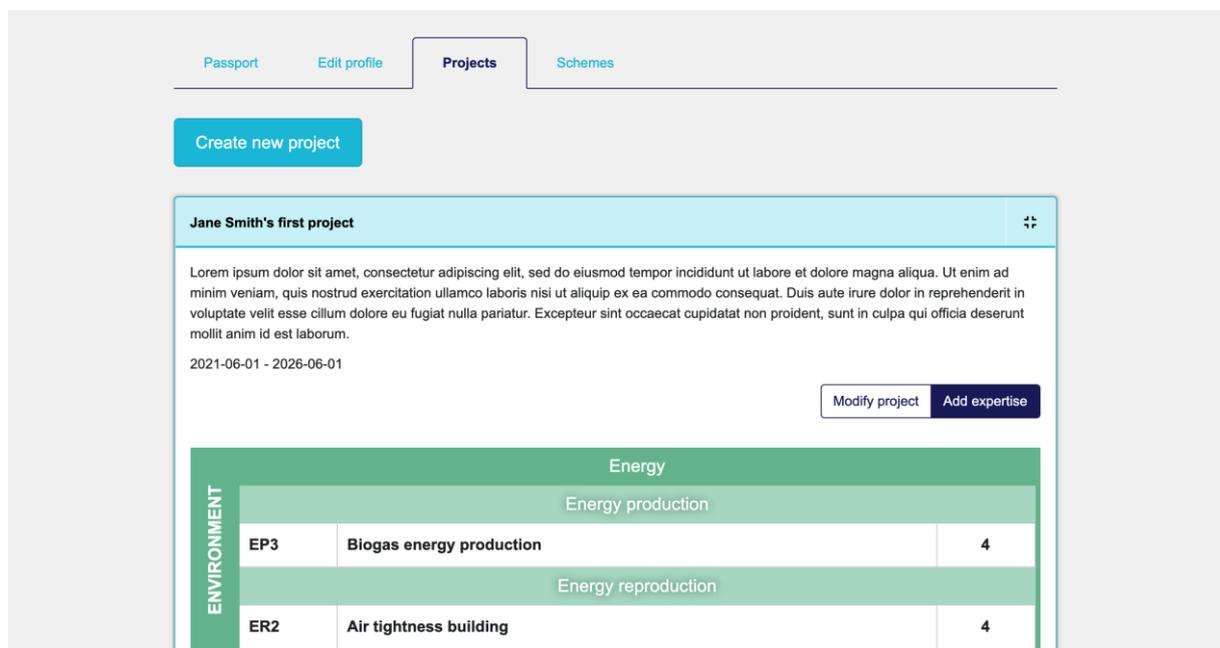
Figure 7 Managing projects under the profile

4.3.2.4 Schemes

Scheme operators have special access to qualification schemes. They are allowed to set up schemes by selecting (or adding new) learning outcomes and the corresponding level of competence settings.
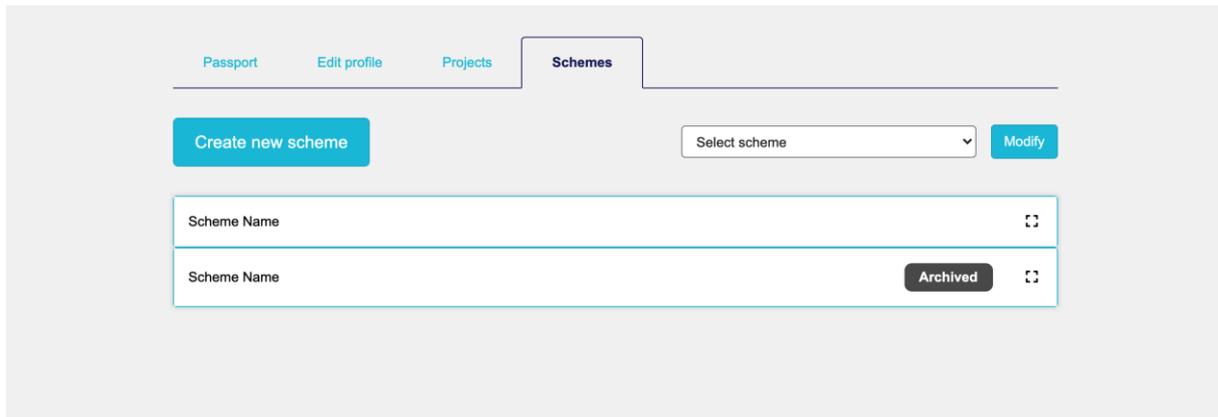
Figure 8 Schemes managed by the operator

More advanced scheme editing function will be added to this tool later on during the Task 3.2.

4.3.3   Match-making Hub

On the home screen the Platform highlights the Match-making Hub's most frequently used features: searching for qualified experts and finding suiting projects.

4.3.3.1   Searching for qualified experts

Visitors can set up filter criteria against the registered experts' passports and list the matching one.

On the result list each expert is displayed as a card summarising the most important details of theirs: name, short description, list of level of competences in relevant areas of expertise.

On the expert cards, there are links to their detailed profile page as well as to the form where one can contact them directly.
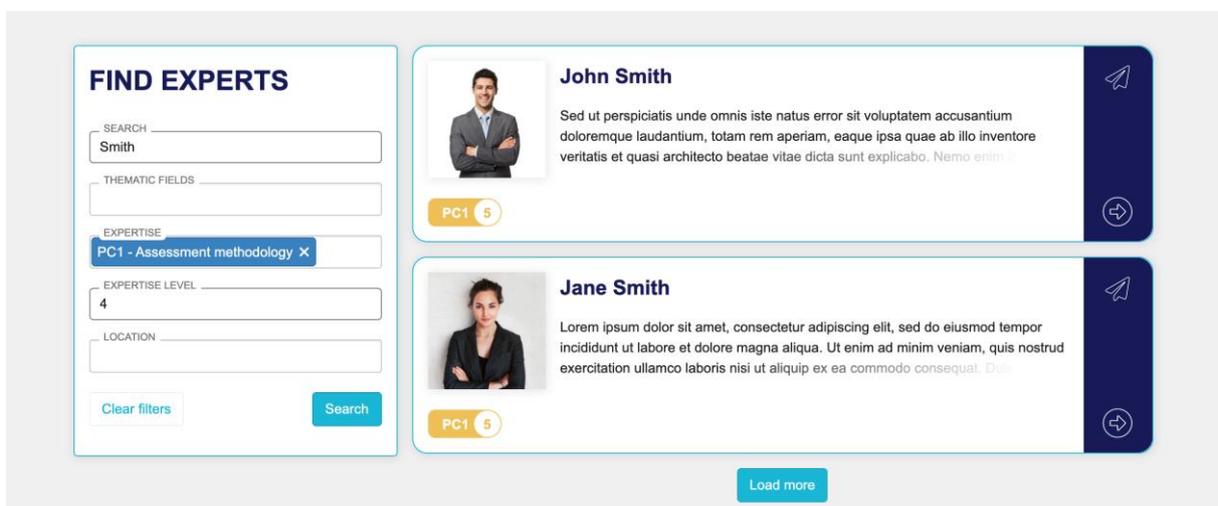

Figure 9 Listing experts

9

4.3.3.2   Contacting experts from the registry

An internal communication panel has been integrated to the Match-making Hub. This tool allows users to initiate email-based discussions. All messages get sent by the system from the address of hub@esr.train4sustain.eu with a token identifying the conversation. Recipients need to reply directly to the system which then delivers the answer to the email address registered to the account of the user, who originally submitted the message, without disclosing sender information and handles responses to that as well.
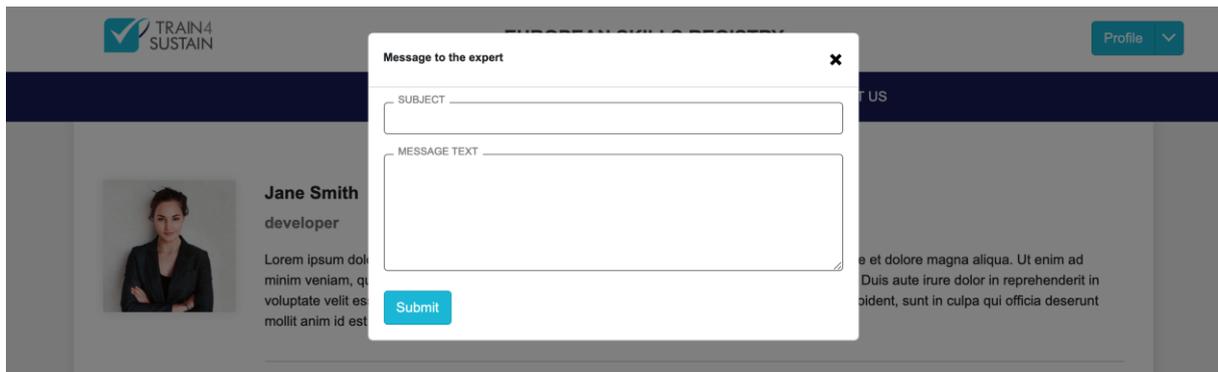
Figure 10 Contact form

4.3.3.3   Publishing projects

On the context of the Platform projects are announcements assigned to certain criteria expressed in the terminology of the *CQS*.
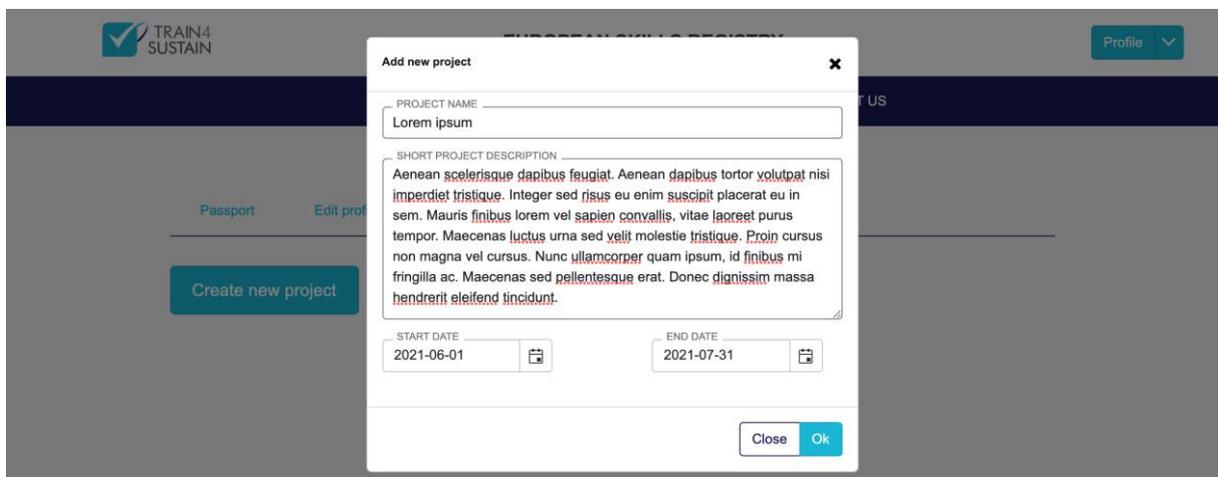

Figure 11 Submitting new project

Once the project's basic information has been submitted, minimum requirements can be set up against the applicants' passports, i.e., their level of competences:
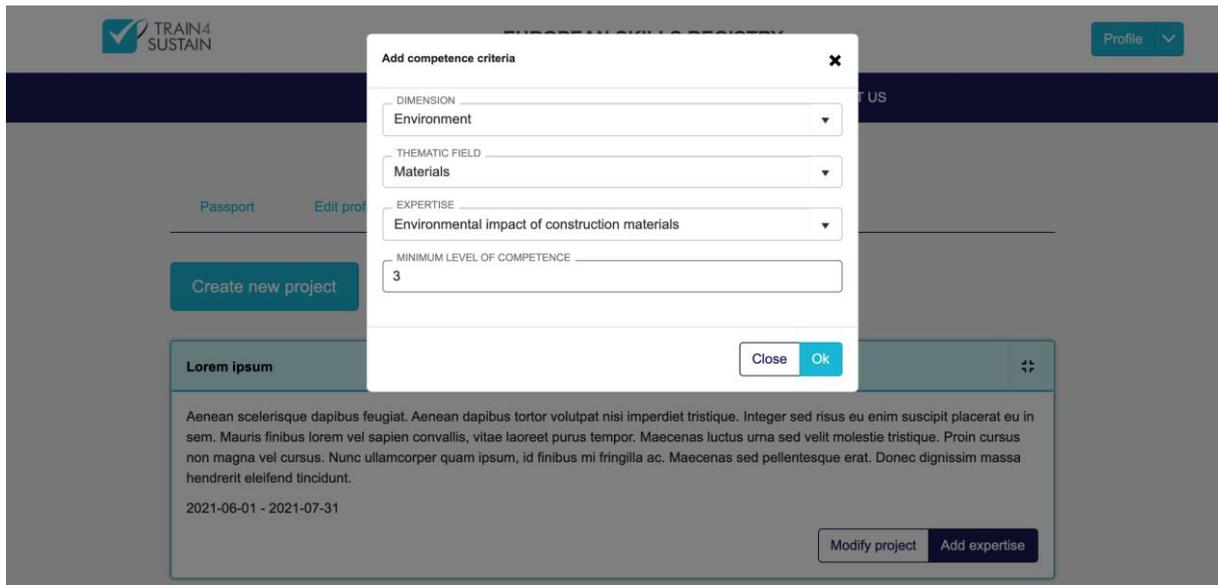
Figure 12 Specifying criteria against the applicants' competences

The assigned criteria are displayed on the project's panel in the fashion of the T4S Passport.
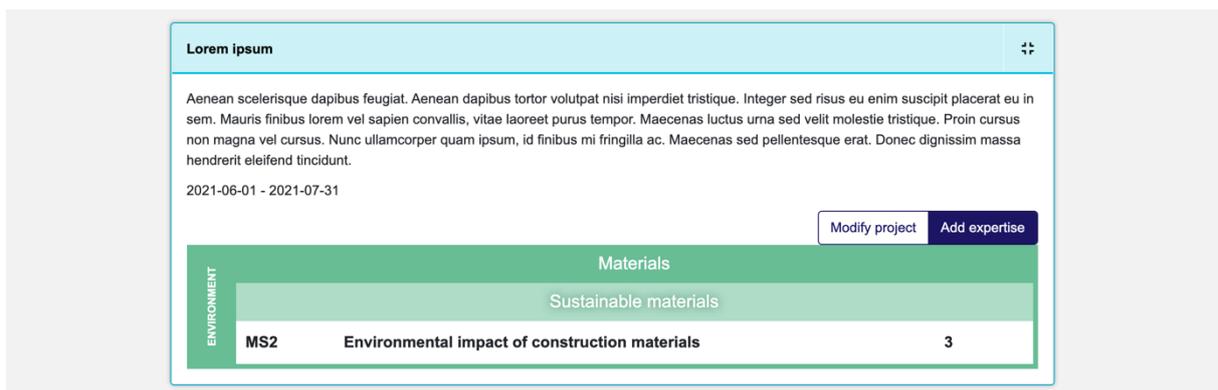
Figure 13 Project with a single competence criterion

4.3.3.4   Listing published projects

Visitors can set up search criteria against the published projects' competence criteria and list the matching one.

On the result list each project is displayed as a card summarising the most important details of theirs: title, short description, planned duration, list of level of competences in relevant areas of expertise.

On the project cards, there are links to their detailed project page as well as to the form where one can contact the responsible directly.
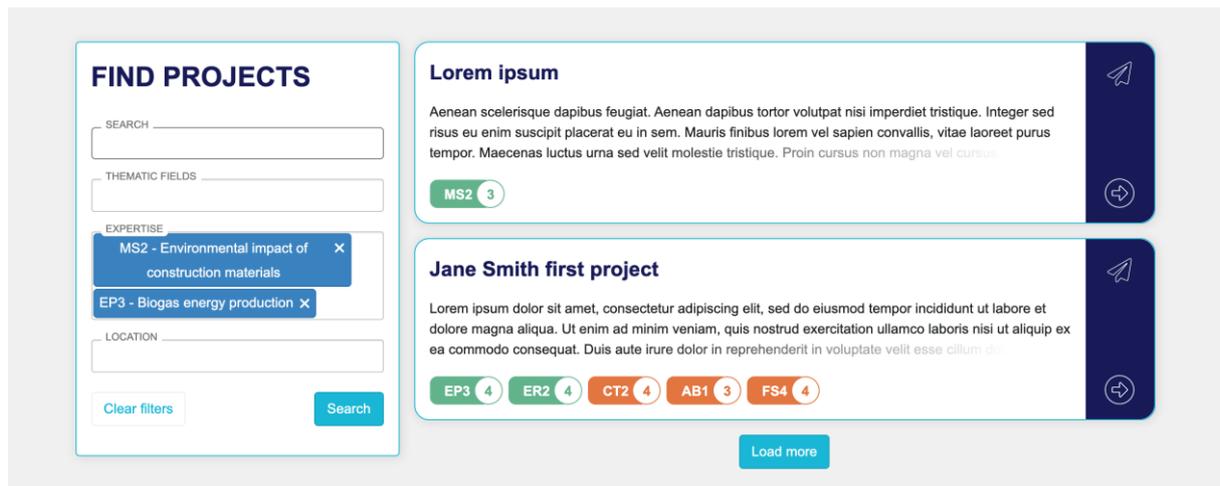
Figure 14 Listing projects

4.3.4 Skills Comparison Tool

The Skills Comparison Tool is a set of functions for using the new competence standard as baseline to make existing qualification and training schemes comparable among each other on a transnational level.

Additional functions are foreseen to be added to the tool later in Task 3.2.

4.3.4.1 Comparing qualification schemes

Comparison of qualification schemes can be done in two steps. First the user selects two qualification schemes from the list of existing ones by searching for them. Schemes can be filtered by keyword, thematic field and area of expertise.

Figure 15 Selecting schemes for comparison

The current version of the Platform performs the comparison on the level of area of expertise. Comparison details on the level of learning outcomes might be implemented later if the *T4S* consortium decides so.

Figure 16 Scheme comparison

4.3.5 Scheme Evaluation Tool

Scheme Evaluation Tool is designed for supporting Scheme operators in breaking down qualification schemes to the level of learning outcomes.

4.3.5.1 Mapping existing qualification schemes
Currently administrators and assistants have access to all the necessary tools on the Control Panel for performing the mapping. In later stage scheme operators will be able to completely carry out the mapping process, as described in *Schemes*

4.3.6 Skills Passport

The T4S Passport, as a tool for facilitating transnational recognition of learning outcomes and skill levels of existing qualifications and vocational trainings, plays a key role in almost all tools the Platform uses. Therefore, the Passport gets displayed highlighted on the experts' public profile:

Figure 17 Expert profile

4.3.7   Control Panel

The Control Panel is the primary means for managing and monitoring the system's databases and operation. Users assigned either to the role of *administrator* or *assistant* can access this section and perform low-level management actions such as:

- Updating content displayed on the Platform
- Reviewing or extending the baseline data of CQS
- Managing projects
- User account management
- User interface translations

Figure 18 Data management tools for CQS

5 <u>Ongoing developments</u>

5.1.1   E-inventory

Models representing courses and training materials have been defined and search service, that retrieves courses and materials from the storage matching the given criteria, has been implemented. As course data collection is an ongoing task, validation and integration of these components are foreseen to take place in the second half of T3.2.

5.1.2   Europass module

The Platform will let users to add Europass CVs to their profile. Europass module is planned to parse these documents and map to the user's ESR profile.

5.1.3   BuildUpSkills module

The *BUS API* (see more in D3.1 of TRAIN4SUSTAIN and the BUS advisor app) has been analysed and the potential mapping between the two systems has been outlined. Later on in Task 3.4, having the E-inventory models verified, the automated synchronisation will be set up.

6 Upcoming activities

6.1 Collecting feedbacks

During the next month feedbacks from users – primarily project partners – will be collected and evaluated in terms of technical feasibility as well as from the perspective of efforts. Based on this activity the system will be updated.

6.2 Translations

The system is prepared for presenting the user interface and all the content in different languages. For that all the translations can be entered by the administrators using the Control Panel.

6.3 Interoperability

As a result of Task 3.4 a PHP implementation of the *API* client for the *ESR* will be published on GitHub exposing public endpoint groups for traversing and accessing the hierarchy of the CQS, comparing qualification schemes, listing and searching for courses and materials stored in the E-inventory.

With this regard the server side resources and endpoints have been set up and prepared for OpenAPI documentation. The underlying services running the actual methods (e.g. scheme comparison) are still subject of the task.