



Dedicated to stimulate demand for sustainable  
energy skills in the construction sector

[www.busleague.eu](http://www.busleague.eu)

**Report: D2.6 Defining personal recognition for each country**

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		Benny McDonagh	
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## **TABLE OF CONTENTS**

<b>Project Introduction</b>	<b>4</b>
<b>Definitions</b>	<b>5</b>
<b>Primer on recognition and mutual recognition</b>	<b>8</b>
Wider context for skills recognition (European Network of Information Centres)	8
<b>Personal and Mutual Recognition at EU Level</b>	<b>9</b>
NEWCOM	10
PROF/TRAC	14
INSTRUCT Programme – Horizon 2020 <a href="https://instructproject.eu/">https://instructproject.eu/</a>	15
<b>Personal Recognition at National Level</b>	<b>17</b>
General elements	17
Ireland	17
NL	18
Austria	18
Bulgaria	19
Spain	20
France	22
<b>Template for personal recognition process</b>	<b>25</b>
<b>Conclusions</b>	<b>27</b>
Conclusions for scope and format of BUSLeague Skills register	27
<b>Recommendations</b>	<b>28</b>
<b>Annexes</b>	<b>29</b>
Austria	29
Bulgaria	30
France	31
Ireland	32
Netherlands	32
Spain	34
<b>Applicability of the BUILD UP Skills advisor-app</b>	<b>35</b>

# 1 Project Introduction

BUSLeague is dedicated to stimulate demand for sustainable energy skills in the construction sector. In order to stimulate demand the BUSLeague project designs a qualification on Energy Skills that is fit for Recognition of Energy Skills. On the one hand, to use this recognition in order to stimulate the demand for properly skilled nZEB and retrofitting teams; for example in asking for those recognitions in legislation, procurement procedures and financing schemes. On the other hand, to facilitate upskilling providers such as training institutes to deliver practical and effective upskilling that counts. This in order to adequately fill in the stimulated demand and to prove the effectiveness of structured and pro-active upskilling.



*The BUSLeague approach to stimulate demand for upskilling*

For effective improvement of the built environment (both new and existing buildings) to nZEB standards all actors in the value chain need to have a proper, transparent and up-to-date set of knowledge, skills and competences. The goal of the BUSLeague qualification for recognition of Energy Skills is to provide this.

The purpose of this document is to prepare for the implementation of personal and mutual recognition between member states on energy skills. The practical implementation processes concerned, governance structures, GDPR compliance and IT requirements for implementation of the developed recognition in each member state, has been inventoried and assessed on their usability. From the IT element, our aim is to build on the ongoing NEWCOM project and Build Up Skills advisor Application (smartphone app). This includes a smart mobile web application to locate and recognise the 'skilled' workforce for the demand side. In order to establish the personal recognition in each country based on the outcomes of the inventory, a draft process for assigning and storing personal recognition is proposed.

## 2 Definitions

Term	Meaning
Energy Skills	A high quality up-to-date set of knowledge, skills, and competences that enables effective improvement of the built environment (both newbuilds and renovations) to nZEB, this as part of the energy transition.
Personal Recognition	Acknowledgement of the existence, validity, or legality of something When a person receives recognition for the things that they have done, people acknowledge the value or skill of their work ( <a href="http://www.collinsdictionary.com">www.collinsdictionary.com</a> ) for example a qualification
Mutual Recognition	Mutual refers to a situation, feeling, or action that is experienced, felt, or done by two or more parties or partners Recognition is the act of recognizing someone or identifying something when you see it ( <a href="http://www.collinsdictionary.com">www.collinsdictionary.com</a> ) for example a qualification
Accreditation	If an educational qualification or institution is accredited, it is officially declared to be of an approved standard ( <a href="http://www.collinsdictionary.com">www.collinsdictionary.com</a> ).  <i>In the context of this deliverable accreditation means that a training provider can be accredited in order to give trained persons a form of recognition that counts (that is widely and objectively recognized as valid and valuable). How much it will count and how formal it will be, will vary from country to country as governance structures and appreciation of recognition differ substantially. For personal certification independent Certification bodies can accredit personnel certification bodies (such as exam/assessment providers) to ISO/IEC Standard 17024.</i>
European Qualification Framework (EQF)	Common European reference framework whose purpose is to make qualifications more readable and understandable across different countries and systems. (COUNCIL RECOMMENDATION of 22 May 2017 (2017/C 189/03))
Certification	The act of certifying or state of being certified ( <a href="http://www.collinsdictionary.com">www.collinsdictionary.com</a> )  <i>In the context of this deliverable certification means a formal certificate following a ISO/IEC Standard 17024 accredited process.</i>
ISO/IEC 17024	Conformity assessment - General requirements for bodies operating certification of persons is an International Standard which specifies criteria for the operation of a Personnel Certification Body (also known as a certification body for persons). The standard includes requirements for the development and maintenance of the certification scheme for persons upon which the certification is based <a href="https://www.iso.org/obp/ui/#iso:std:iso-iec:17024:ed-2:v1:en">https://www.iso.org/obp/ui/#iso:std:iso-iec:17024:ed-2:v1:en</a>
Competence	The ability and skillset of an individual/organisation to understand or do something effectively. This consists of a group of related, knowledge, skills and abilities (KSA) that enables a person (or an organization) to act effectively in a job or situation.
Unit of Learning Outcome	The 2008 EQF recommendation defines learning outcomes as ‘...statements of what an individual should know, understand and/or be able to do at the end of a learning process’.

	ULO's are statements regarding what a learner knows, understands and is able to do on completion of a learning process, which are defined in terms of knowledge, skills and attitude.												
Skill	<p>Something a person needs to be able to do/perform in order to reach a certain result.</p> <p>To have a 'skill' or to be 'skillful' signifies the ability to use know-how to complete tasks and solve problems. These can be cognitive (involving the use of logical, intuitive and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools and instruments).</p> <p>Ability to apply knowledge and use know-how to complete tasks and solve problems. In the context of the EQF, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools and instruments).</p>												
Knowledge	<p>'Knowledge' is the body of facts, principles, theories, and practices that is related to a field of work or study.</p> <p>Know-how you need to know by 'head' in order to perform a task as efficient and effective as possible.</p> <p>In the context of the EQF, knowledge is described as theoretical and/or factual.</p>												
Skill-level (PROF/TRAC)	<table border="1"> <tr> <td>0</td><td>Not applicable / no knowledge and skills required</td></tr> <tr> <td>1</td><td>Has little knowledge and skills with respect to the relevant field / technology (mostly <i>outside</i> the own field of expertise). Understands basic principles and is able to take part in project team discussions.</td></tr> <tr> <td>2</td><td>Understands basic knowledge and has practical skills within the field / technology, is able to solve simple problems by selecting and applying basic methods, tools, materials and information (mostly <i>outside</i> the own field of expertise).</td></tr> <tr> <td>3</td><td>Has comprehensive, factual and theoretical knowledge and skills within the field / technology, is capable of solving standard problems within the field.</td></tr> <tr> <td>4</td><td>Has advanced knowledge involving a critical understanding of theories and principles and skills, required to solve complex and unpredictable problems in the field and is aware of the boundaries.</td></tr> <tr> <td>5</td><td>Has specialized knowledge and problem-solving skills, partly at the forefront of knowledge in the field, in order to develop new knowledge and procedures and to integrate knowledge from different fields.</td></tr> </table>	0	Not applicable / no knowledge and skills required	1	Has little knowledge and skills with respect to the relevant field / technology (mostly <i>outside</i> the own field of expertise). Understands basic principles and is able to take part in project team discussions.	2	Understands basic knowledge and has practical skills within the field / technology, is able to solve simple problems by selecting and applying basic methods, tools, materials and information (mostly <i>outside</i> the own field of expertise).	3	Has comprehensive, factual and theoretical knowledge and skills within the field / technology, is capable of solving standard problems within the field.	4	Has advanced knowledge involving a critical understanding of theories and principles and skills, required to solve complex and unpredictable problems in the field and is aware of the boundaries.	5	Has specialized knowledge and problem-solving skills, partly at the forefront of knowledge in the field, in order to develop new knowledge and procedures and to integrate knowledge from different fields.
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Multi-layered qualification	A multi-layered qualification is a description of tasks that have to be performed to be effective. It consists of a layer with basic tasks and one or more layers of context specific layers. For example nZEB related tasks, BIM-related tasks or Indoor air quality (IAQ) tasks.												
Occupation	An occupation is a job or profession.												
Profession	A profession is a specialized occupation characterized by profession specific education and training.												

Qualification	A pass of an examination or an official completion of a course, especially one conferring status as a recognized practitioner of a profession or activity.
Qualification document	<p>A qualification file describes what a participant in education should know and master at the end of a (intermediate vocational training) course.</p> <p>A qualification file describes the level of starting professional workers (school leavers).</p>
Qualification structure	<p>A formal system describing qualifications.</p> <p>It makes visible which qualifications or sets of competences are sought by the labour market, education and society to secure a job, start further studies or participate in society.</p>
Building stages & RIBA	<p>A building life-cycle consists of several stages. The RIBA Plan of Work is the definitive UK model for the building design and construction process.</p> <p><a href="https://www.architecture.com/knowledge-and-resources/resources-landing-page/riba-plan-of-work">https://www.architecture.com/knowledge-and-resources/resources-landing-page/riba-plan-of-work</a></p>
Task	A piece of work / an activity to be done or undertaken.
Subtask	An activity that is part of a certain task at a subordinate level. Individual subtasks can be linked to multiple tasks.

### 3 Primer on recognition and mutual recognition

The methodology employed in this report was to first ascertain each partner's current personal recognition system for knowledge, skills and competences and then plot how we could meet a mutual recognition target between each country. Some countries showed potential for mutual recognition of some micro-trainings while others would need more support regarding the many obstacles identified.

#### **BUSLeague recognition approaches**

1. Personal Recognition in BUSLeague
  - a. Personal recognition as a starter to acknowledge and reward personal professional development of construction workers through continuous professional development micro learnings
    - i. Personal track record (prior learning)
    - ii. Personal skills cards earned / digital means such as badges
  - b. For the employer or future employers as input for quality branding and certification used in tendering for projects (training clause) for example
  - c. For the clients as independent 'trust' creator to validate the awards
2. Mutual Recognition in BUSLeague
  - a. To make transparent which Energy Efficiency (EE) skills are EU mutually recognizable
  - b. To make transparent if there are optional EE-skills that are country specific
  - c. To make overlaps in skills visible applicable for different aspects in the energy transition

#### **3.1 Wider context for skills recognition ([European Network of Information Centres](#))**

ENIC (European Network of Information Centres) and NARICs (National Academic Recognition Information Centres) were established to improve the recognition of qualifications and periods of study in European countries and beyond\* – thereby facilitating the mobility of workers, students, teachers and researchers.

ENIC was created by the Council of Europe and Unesco to give effect to the terms of the LRC (Lisbon Recognition Convention) in signatory countries. In EU countries, NARICs perform this role.

The intention of the LRC is that awards obtained in one signatory country are recognised in all the others. Therefore, ENIC - NARICs advise on use of qualifications throughout the EU and beyond.

The signatories to the European Cultural Convention are: the EU, the European Economic Area (EEA\*\*) and Turkey.

It should be noted that the status and scope of NARICs differ depending on the country.

For instance, in the majority of states, institutions of higher education are autonomous. They make their own decisions on the admission of foreign students and exemptions from parts of study programmes on the basis of education undertaken elsewhere.

As a result, most NARICs do not take decisions but offer information and advice.

If you hold an education and training award and want information on how you can use it in any of the designated countries, see the [Enic-Naric website](#).

*\*Enic includes signatory countries to the Lisbon Recognition Convention such as the US, Australia and NZ. The Lisbon Convention (Convention on the Recognition of Qualifications concerning Higher Education in the European Region) helps achieve fair recognition of both completed higher*



*education qualifications and qualifications providing access to higher education in the European Region.*

*\*\* EEA = EU member states plus Iceland, Liechtenstein, Norway and Switzerland.*

## 4 Personal and Mutual Recognition at EU Level

An initial list of challenges has been prepared to guide the desktop research and interviews when investigating other relevant registers in each country and at EU level. The listing is as follows:

- 1 Governance and organisational structures
  - Roles and Responsibilities (administration, worker, public, legal)
- 2 IT requirements
  - Private cookie policy
  - Data protection requirements/ GDPR, what data is stored
- 3 Specific Content and provision (knowledge, skills and competences)
- 4 Usability
  - Terms and conditions
  - Code of conduct
- 5 Access
  - Register member terms
  - Register user terms
- 6 Legal implications
  - GDPR
  - Complaints board and Appeals
- 7 Level of recognition and branding
  - Trademark Logo/badge options- identification cards, credits etc etc
- 8 Barriers (economic, legal, political etc)
- 9 Other

For synergy with other projects connections have been made to:

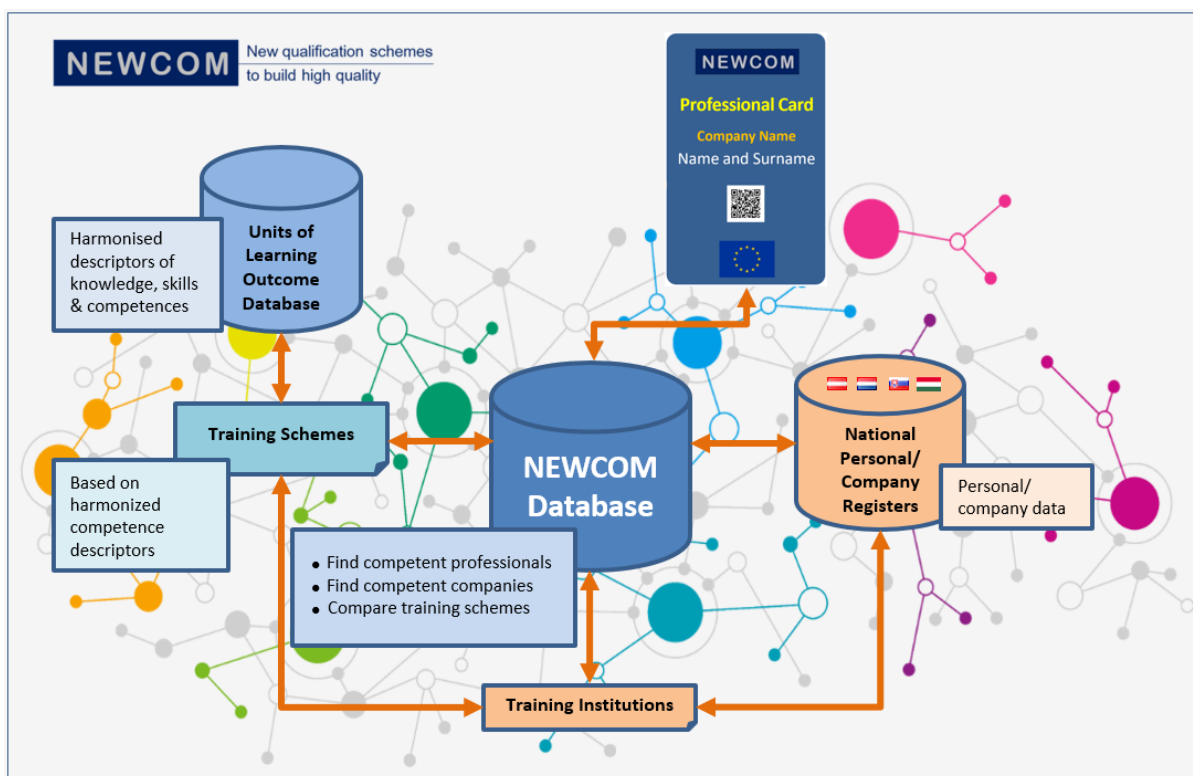
Project Title	Connection
NEWCOM	connection by Jan Cromwijk and Georg Trnka
PROF/TRAC	connection by Jan Cromwijk
SEetheSkills	connection by Jan Cromwijk
INSTRUCT	connection by Dragomir Tzanev Eneffect Bulgaria
ARISE	connection by Jan Cromwijk
Train4Sustain	connection by TUS and Jan Cromwijk
Construction Blueprint	Connection by TUS

NEWCOM and PROF/TRAC provided examples from past experiences with recognition on Energy Skills. The other projects are implementing recognition elements or for recognition relevant content. In the implementation phase of the BUSLeague project, the BUSLeague team will proactively reach out to these projects in order to co-create and collaborate.

The practical implementation processes, governance structures, GDPR compliance and IT requirements for implementation of the developed recognition in each member state, have been inventoried and assessed on their usability, copies are available in the appendix to this report.

#### 4.1 NEWCOM

As a basis for BUSLeague partner consideration of mutual recognition methodology of the NEWCOM project was accepted as an example of best practice. The Horizon 2020 European Union funded project NEWCOM emerged from the BUILD UP Skills initiative and provides solutions to improve and maintain energy efficiency in the building sector. BUSLeague partners can learn much from the workings of this project. The NEWCOM project implemented new qualifications and further education schemes for three specific professions, roofers, ventilation installers and building inspectors. The professionals were tested and recognised against the developed and agreed ULOs (Units of Learning Outcomes). The certified professionals are offered to register in the European Database of Professionals implemented through BUILD UP Skills advisor app.



*The environment of the NEWCOM database (source: NEWCOM D5.4 Report)*

A competence database was created with the aim of making acquired skills comparable across Europe. This database provides a basis for mutual recognition of skills of professionals throughout Europe. The competence database links the description of competencies gained by attending a relevant course with the expert. Furthermore, a professional card can be issued on the basis of the

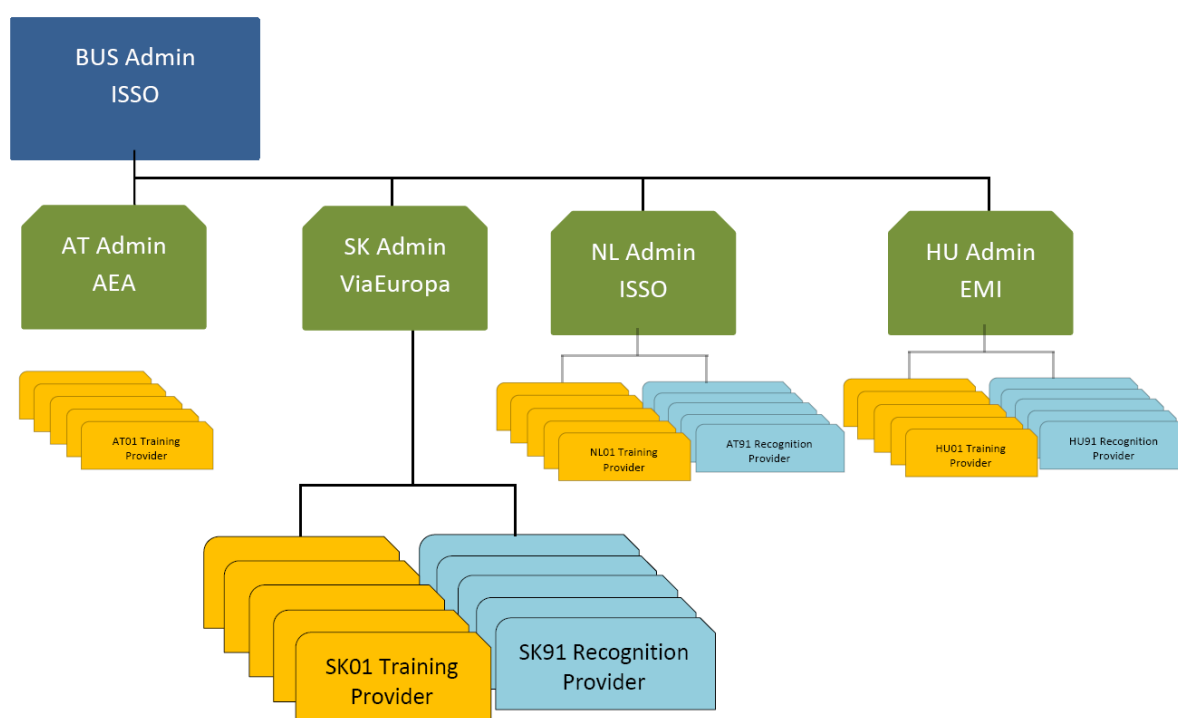
acquired skills. The developed system can be expanded to almost any field of work and used throughout Europe.

Moreover, identification of market barriers to the implementation of (European-wide) mutually recognised training schemes for professionals in the building sector and ways of overcoming these barriers to create the needed market demand was a priority topic that was worked on during the whole project (2017-2020).

Although the concept of BUSLeague differs from NEWCOM, the main learnings are helpful, particularly the mutually recognised ULOs and others as follows:

## 1 Governance and Organisational Structures

The NEWCOM scheme operates as a decentralised scheme where each NEWCOM country has their own administrator. The administrator manages mandates within the country of responsibility and distributes access to the database for training institutions and recognition providers, as illustrated in figure below. For running and maintaining the database, a service license agreement (SLA) is agreed between ISSO (The Netherlands) and the national administrators across the consortium.



*Governance Structure NEWCOM*

### *Roles and Responsibilities (admin, worker, public, legal)*

Country Administrator	The country administrator mandates training providers and/or recognition providers in the country of responsibility.
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Training Provider	A precondition for acting as a NEWCOM Training Provider that the mandated organisation has implemented a GDPR Compliance Programme.
Recognition Provider	The recognition provider is the authorized body according to the national laws (if applicable) and rules mandated by the NEWCOM Country Administrator and carries out assessment of construction professionals against ULOs. A precondition for acting as a NEWCOM Training Provider is that the mandated organisation has implemented a GDPR Compliance Programme. Exam or assessment candidates must give their consent to the Recognition Provider for adding their data to the Recognition database.

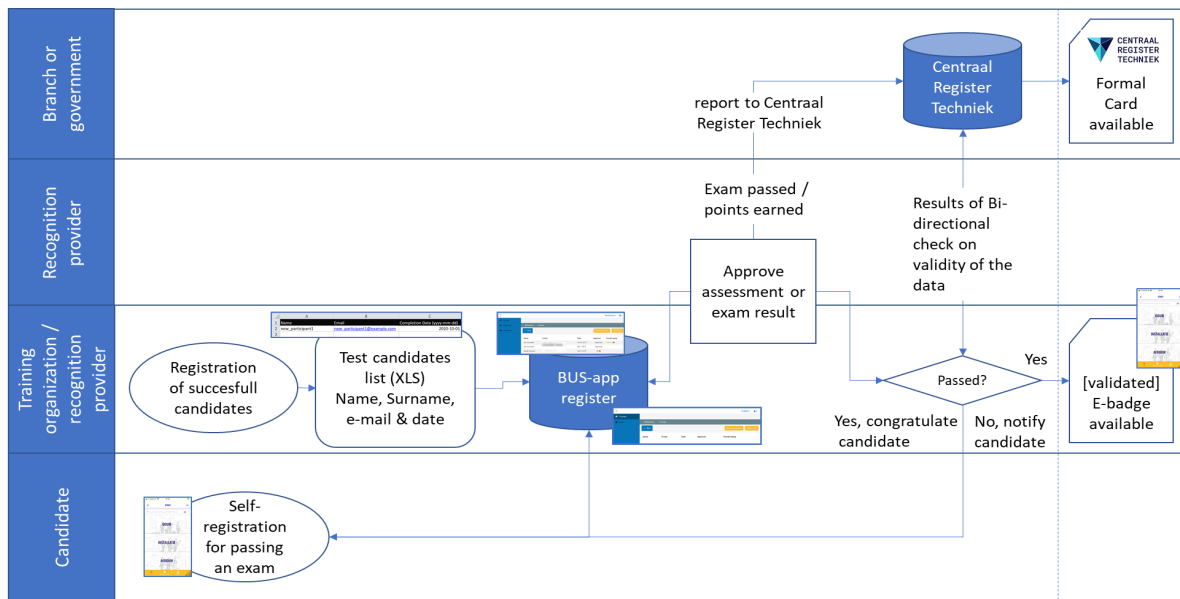
Within the NEWCOM project, which concluded in 2020, the national requirements for each country were considered, which led to the implementation of the recognition process to Austria, Hungary, The Netherlands and Slovakia.

As basis for the mutual recognition of the developed training schemes, a database of competences (pilot version) was developed. Here the gained knowledge, skills and competences of professionals is collected. Professionals who have passed trainings or companies who have trained craftsmen can be registered in this database. This way, professionals and/or companies can promote themselves or their work. Moreover, companies in search of qualified professionals can compare competences of registered crafts.

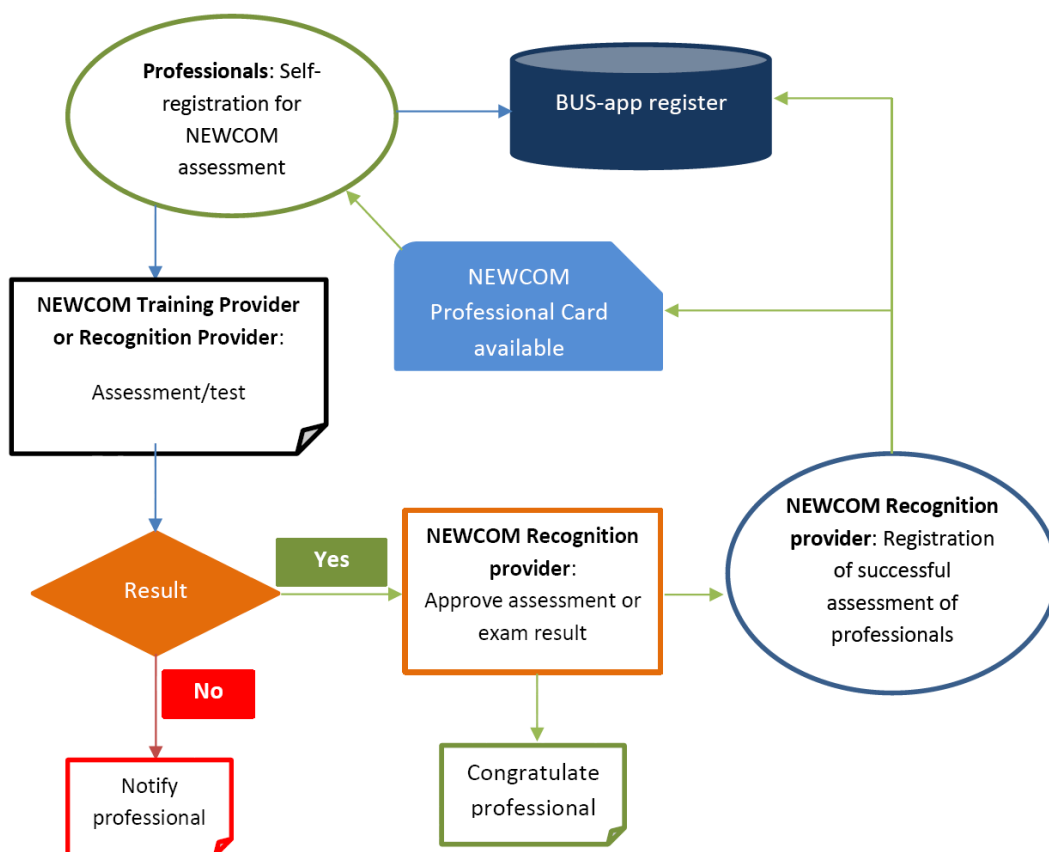
According to the national recommendations, the following rules apply on the format of the professional card:

- *Electronic format* downloadable to mobile devices: iOS: Wallet format, Android and Microsoft: .jpg format;
- European design – *one design* used by all partners;
- *Data on the card*: name and surname, registration number (number of the card), QR code with link back to the database for tracing purposes.

Dutch system explained:



*Structure of the administration for the recognition process in the Netherlands*



*Structure of the administration for the recognition process in **Austria** and **Slovakia***

## 2 IT requirements

- Software as a Service / Software as a platform
- Private cookie policy: only functional cookies

- Data requirements: content has to follow the applied methods and rules for skills mapping, occupation names, specialisms and learning goals
- 3 Specific Content and provision of recognition at EU level for BUSLeague outcomes must be mutually agreed by all partners
- 4 Usability
  - Terms and conditions
    - Free for individuals
    - A transaction based platform model is under development. Users adding value or content to the platform will earn value. When the value is monetary a share of the value will be deducted as a usage fee for the platform. This model will be role-based. (In a platform such as the BUILD UP Skills advisor app value-streams underpin the long term sustainability of the platform. Some of the values are worth paying for. Platforms function best when a certain percentage of these payments are allocated to a sustaining fund for covering Service License Agreement costs and hosting costs.)
  - Code of conduct
    - Yes, in a generic form. It can be made country specific
- 5 Access
  - Register member terms – no
  - Register user terms – yes, on individual level
- 6 Legal implications
  - GDPR: personal consent, the user determine what data may be shared and for what purpose
  - Complaints board and Appeals: not yet
- 7 Level of recognition and branding
  - Trademark Logo/badge options- identification cards, credits etc
    - BUILD UP Skills app: with its own visual identity
    - Skill card layouts are customisable on a set of properties
- 8 Barriers (economic, legal, political etc)

## 4.2 PROF/TRAC

The successful PROF/TRAC project concluded in 2018 but continues to be used as a training platform and can offer guidance to BUSLeague on the implementation of its mutual recognition objectives.

At its core the PROF/TRAC project had 4 objectives:

**Objective 1.** Mapping of the required skills and current skill gaps of professionals in NZEB. This includes the mapping and assessment of the professions involved in NZEB construction and retrofitting and comparing the required skills versus present skills and the existing qualifications, knowledge sources, education programs, post-initial training supply and accreditation/ certification structures.

**Objective 2.** Development of an Open Training Platform including methods for a systematic and sustainable access to knowledge, which is the core of the PROF/TRAC project. The open training platform is used for organizing a train-the-trainers programs and for maintaining a repository of training materials and for the further exploitation of the results.

**Objective 3.** Development of a Train the Trainers program for the developed qualification schemes, which is organized on an international scale by several EU umbrella organisations representing the building sector, engineers (REHVA), architects (ACE) and managers, endorsed by Housing Europe. The trained trainers form a group of ‘frontrunners’ in order to create a snowball effect and to act as ambassadors for the PROF/TRAC project.

**Objective 4.** Development of a repository of the training material for use in education and post-initial education, as part of the Open Training Platform to store, update and maintain the training material.

Central to the PROF/TRAC concept is a EU-wide supported and accepted Open Training Platform for Continuing Professional Development (CPD) of professionals on medium and senior level, concerned in NZEB construction and retrofitting. The PROF/TRAC platform is open and easily accessible and has three types of functionality:

1. The first functionality is the operational Networking & Community for CPD.
  - a. To provide continuing access for CPD trainings joining the Platform during and after the project.
  - b. To facilitate collaboration and mutual learning.
  - c. To enable networking and exchange of knowledge.
2. The second functionality is the unlocking of the needed qualifications for CPD. This includes:
  - a. Set up a meta-data structure, describing the professional profiles in relation to NZEB.
  - b. Develop and maintain a database with the available training materials (online and offline). This will be matched with the professional profiles by using the meta-data structure. For this functionality the BuildUpSkills-App, developed in the Dutch BuildUp skills project (BuildUpSkillsNL) and related databases is used.
  - c. The implementation of a and b in the BuildUpSkills app.
3. The third functionality is the creation of a Repository to make the platform sustainable. This functionality includes:
  - a. The possibility for adding, maintaining and exploitation of training materials.
  - b. A sustainable system of co-creation in which teachers and market actors can notify each other on required new knowledge and needed updates.
  - c. To feed in and unlock exercises and seminars made by teachers in initial education.
  - d. To create an efficient way to deal with changes in standards and regulations

Conclusion from PROF/TRAC applicable to BUSLeague can be summarised as follows:

The project resulted in an EU level Qualification Scheme, which defines harmonised terminology for the different activities fields and offers minimum skill level recommendations at EU level for each profession. The scheme is a possible solution to balance the consequence of the fragmented CPD market and the non-harmonised national regulatory schemes of certification; - **The BUILD UP Skills advisor App**, where an EU-region was added to collect EU level courses and webinars. The app can be linked and used in a further development stage of the EU Qualifications scheme and continuously updated with new EU courses. On the other hand, it can also be translated into national languages and populated with courses available at national level.

Spanish and Dutch Build up Skills partners associated with BUSLeague participated in PROF/TRAC, aiding and assisting our quest for a method of mutual recognition in BUSLeague.

### 4.3 INSTRUCT Programme – Horizon 2020 <https://instructproject.eu/>

The task of the European INSTRUCT project is to introduce changes in the requirements for construction workers and to prove the close link between energy skills and the energy performance as well as the effect of reducing greenhouse gas emissions. Our Bulgarian colleagues on BUSLeague EnEffect, are partners in INSTRUCT in addition to partners from Poland, UK, Italy, Finland.

The findings of *“Requirements for new instruments for skills recognition in the construction industry”* a deliverable report states that “An overarching requirement is identified in the need for a widely accessible and trusted digital platform that can allow (a) training organisations to register their training offers and associated learning outcomes, (b) accreditation organisations to assess these and publish their accreditation outcomes, (c) white and blue workers to register their skills and trainings, and (d) employers to search and recruit the skilled workers most suited to their job across Europe. It is interesting to note that the job market has been deregulated as a result of the ongoing pandemic and the restriction of movements of staff. The recruitment of skilled workers, therefore, transcends existing geographical boundaries while promoting a competitive landscape for skilled workers adapted to a wide range of country specific organisational and cultural work practices across Europe”.

“Blockchain is identified as a contender solution to deliver such a digital platform, which will be augmented with a wide range of services allowing the delivery of: 1. passports/registers for workers at regional/national level and support for their take up at EU level. 2. mobile applications facilitating the comparison of workers' skills and qualifications between countries, 3. new legislative frameworks or public procurement practices, 4. initiatives for home and building owners, and, 5. new partnerships with producers and retailers. However, several limitations need to be addressed for the solution to be viable.

These are listed below:

- Blockchain technologies are in active development globally, and there may be new developments affecting our findings.
- The use scenarios selected may not adequately be covered as optimal approaches for the use of Blockchain in energy efficiency education.
- Lack of or insufficient roadmaps and examples for regulation and monitoring of Blockchain use in education. Further details on Blockchain operations in a learning environment are needed.
- In the context of integrating training with Blockchain, a lack of studies on labelling in the education sector makes it difficult to design a general framework.
- There are no systematic methods or views for assessing the process of learning and less methods to equate conventional forms of learning-books, courses, online learning, etc. with no common approach that can integrate all training elements within a comprehensive training framework.
- The problems of scalability and storage parameters are difficult to benchmark with a view to assessing the cost of hosting energy efficiency trainings in a Blockchain compliant framework.”

Finally concluding that “As elaborated earlier in this report, there is no authoritative solution supporting the standardisation and use of qualifications such as certificates, badges for learning, awards etc., (Suwal et al., 2019). Documents proving the authenticity of what has been achieved continue to be filed by trainees when obtaining educational attainment, education certificates and work experience records. In this process, the use of fake documents has been a problem for many years (Arenas & Fernandez, 2018). Due to this authenticity, and security problem, the adoption of new technologies is required with a full transition to digital records, resulting in a complex and time-consuming process for document verification. It is important to implement a more effective verification system to prevent document fraud as there is a limited capability for solving the training authenticity problem effectively. The resulting system may become so complex that it can cause delays to business activities and legal proceedings with multiple third-party agencies managing the online education certification inefficiently (Iqbal, 2020),(Sun et al., 2018)”



Given that there seems to be general consensus that the solution to mutual recognition is not yet written but needed, there is scope for the BUS app to serve as a gap filler in this context, at least for BUSLeague, if partner countries can overcome the barriers already listed.

## 5 Personal Recognition at National Level

### 5.1 General elements

With the aim of a Europe-wide comparability of acquired skills, a competence database has been created within the NEWCOM project. This database was created with the aim of making acquired skills comparable across Europe. The core element of the database is the harmonized description of competences of training schemes it contains. This is done through the units of learning outcome database, which is a relevant element of the NEWCOM competence database. Only by implementing this feature is it possible to compare the content and acquired competences of training schemes. Professionals can be tested and recognized based on developed and agreed ULOs (units of learning outcomes) in correlation with these new training schemes. After a successful verification of their competences, professionals have the possibility to register in the NEWCOM competence database implemented through the BUILD UP Skills advisor app to show their competences in a validated format (professional card) and to be found by customers or companies.

At National or regional level, some short trainings in partner countries have been piloted and are recognised but our learning has shown that it is not yet consistent or mainstream. At mid-term reporting of BUSLeague it is the intention of partners to further explore methods (like the BUS app) for recognising learning and this will be reported on in Work Pack 5 through National Implementation Plans.

### 5.2 Ireland

In Ireland currently short trainings accredited and unaccredited for CPD purposes are delivered such as the BIMzeED pilot project led by TUS, and those delivered by the Irish Green Building Council Home - Irish Green Building Council ([igbc.ie](http://igbc.ie)), MosArt Architects :: Architecture & Landscape Design, Wicklow & Dublin and many other courses such as by TUS and TU Dublin, GMIT etc are taking place and adding value to the construction industry skillset. There is of course national recognition of accredited courses but no formal system for unaccredited short learnings as of yet although as mentioned many are being delivered. In Ireland, registered professionals can gain credits with their own professional bodies such as RIAI Register, Engineers Register, CIRI Register.

#### **QualiBuild**

The QualiBuild project was funded by the Intelligent Energy Europe Programme and was completed in July 2016. The project sought to address one of the main issues identified within the Irish Build Up Skills (BUSI) Roadmap, which was that many construction workers lack the core knowledge in relation to low energy buildings.

Qualibuild project:

- a) Developed and rolled out the Foundation Energy Skills Programme 200 construction workers.
- b) Developed and rolled out the Train the Trainers programme to increase the knowledge and competency of trainers involved in construction training
- c) Developed and rolled out a communications campaign to homeowners on the importance of employing trades upskilled in quality and energy efficiency.

Partners in this were TUS (formerly LIT), IGBC, Dublin Institute of Technology and the Construction Industry Federation.

The programme also examined opportunities for recognition of trainings like this which was an outcome of participants surveyed. A central skills register, which has not yet been established or an authority defined to oversee the same was a recommendation of the programme.

Considerations documented (mirroring outcomes of similar projects) include the following:

- 1 Governance and organisational structures
  - Roles and Responsibilities (admin, worker, public, legal)
- 2 IT requirements
  - Private cookie policy
  - Data requirements
- 3 Specific Content and provision
- 4 Usability
  - Terms and conditions
  - Code of conduct
- 5 Access
  - Register member terms
  - Register user terms
- 6 Legal implications
  - GDPR
  - Complaints board and Appeals
  - Transparency
- 7 Level of recognition and branding
  - Trademark Logo/badge options- identification cards, credits etc etc
  - What is acknowledged, open to public/private, etc
- 8 Barriers (economic, legal, political etc)
- 9 Other

The final report of QualiBuild is available here [QualiBuild-Final-Report.pdf \(igbc.ie\)](#)

The training target groups in Ireland's BUSLeague National Implementation Plan are DIY store workers, SMEs and trades.

### **5.3 NL**

In the Netherlands a fully functioning system, 'a lighthouse' for recognition has been established through the NEWCOM project and resulting in an IT solution, well established there, the Build Up Skills Advisor App (for further details see [5.3 European Database \(newcomtraining.com\)](#)) supported by ISSO. Centraal Register Techniek and a formal card available makes the system seamless and while many years of development and animation of the process, including National funding it remains the best positioned option for BUSLeague consortium in terms of mutual recognition of short learnings for construction workers in the Netherlands.

### **5.4 Austria**

To identify energy skills that are actually needed and possibilities to support the recognition of correspondent trainings in Austria, the national climate protection network (klimatektiv) has been actively used. Moreover, a specific national focus has been laid on cooperation with national supplier networks to determine presently successful supplier trainings. In this context, several

meetings were held with product manufacturers and their unions during the implementation of the BUSLeague project.

Based on the findings as well as the project orientation (defined scope of the BUSLeague EE-skills qualification), it was decided to determine national energy advisors as target group for the trainings because it is known from the past that this target group is willing to take part on further education according to the holistic focus of the BUSLeague topics (e.g., cross trade issues). Energy advisors are the connecting link between the end consumer and the construction business. The energy adviser supports the end consumer to define his construction demand with focus on sustainability and energy efficiency.

In cooperation with the further education institute Energy Agency Styria, short online trainings are under development to the following topics:

- Construction site procedures in connection with the implementation of a renovation roadmap
- Interpretation of available quality checks (blower door test, thermography...)
- Management of ecological construction material on the building site

In December 2021 the first online training on construction site procedures in connection with the implementation of a renovation roadmap was implemented. This short and hands-on online training focused on the successful implementation of step-by-step renovations in residential buildings in line with the development of individual renovation roadmaps. The training went together with the following learning goals:

- Understand critical elements in the development process of an individual renovation roadmap for residential buildings
- Explain main elements of successful step-by-step renovations linked to an individual building renovation roadmap
- Avoid frequently made mistakes during the step-by-step renovation of residential buildings

40 participants (mainly energy advisors) attended the online training session, which took around 100 minutes. The training was evaluated excellent by over 80% of the participants in line with quality, relevance and satisfaction.

To enable the possibility for mutual recognition detailed competence descriptions of these short online trainings will be developed. Accordingly, the recognition of the trained skills is planned to be done by the further exploration of the BUILD UP Skills advisor app (further development of the integrated NEWCOM competence database).

The recognition process will be operationally guided by the Austrian Energy Agency within BUSLeague.

## **5.5 Bulgaria**

### **People Certification and Mutual Recognition**

Currently, recognition of skills in Bulgaria is a prerogative of the national qualification system, either as outcome from the initial vocational education process, under the auspices of the Ministry of Education, or as part of the continuous vocational training and education overseen by the relevant governmental agency (NAVET). However, there is no functioning CPD system requiring building professionals of any qualification to update their skills and knowledge on a regular basis; neither are there any skills registers or passports evidencing the acquired formal or informal qualifications. The

individual professionals take care for the (paper-based) record of their qualifications and certificates themselves and present them at request.

The scheme that is in elaboration under BUSLeague aims to overcome that situation by establishing an online register of qualified professionals at the Bulgarian Construction Chamber. The scheme is based on the current portfolio of nZEB-related specialties as defined in the State Educational Standards for the relevant professions, as specialists would be able to improve their knowledge and skills on an ULO that is integrated in the current Standard or to upskill themselves with EE-relevant ULOs included in the BUSLeague (or other) qualification scheme. In that respect, BUSLeague EE-qualification could both serve as an additional to the national-level recognition system, and as a platform for mutual recognition across the EU.

To optimise and support that process, a platform for online microlearning should be established, potentially adapting existing EU-wide solutions as the BUILD UP Skills Advisor App or the CraftEdu database; however, these should be recognised by the national accreditation body, which, in this framework, is perceived to be the Bulgarian Construction Chamber, supported by NAVET and, presumably, by the Ministry of Education and Science. The same ULOs should also be reachable by traditional classroom and/or practical training, as the level of literacy of the construction sector workforce does not suggest full outreach of online training tools.

Unfortunately, in Bulgaria there is no system as of the time of writing this report for continuous professional development in the construction sector yet, which is one of the major gaps which BUSLeague will try to address. Within the national VET, certification is most commonly provided by “qualification courses on part of profession”, as exemplified by the courses developed and piloted BUS EnerPro. The most common international voluntary certification schemes in Bulgaria for construction workers is the Passive House Certified Tradesperson, as promoted by Train-to-NZEB. For designers, besides the Certified Passive House Designer and Certified Passive House Consultant courses offered by Passive House Bulgaria, there is a growing market for LEED and BREEAM certification. The only attempts for mutual recognition of qualification among countries in the region are initiated by the Building Knowledge Hubs network started by Train-to-NZEB. Activities under these two initiatives have, however, been hampered by the COVID pandemic as they are mostly based on hands-on training. New attempts are being done on CraftEdu, and the work will be continued within INSTRUCT, where a regional cluster will be supported. On the other hand, there are many initiatives of VET establishments on the Erasmus+ programme, but they are usually limited to exchange of trainers and students and haven’t resulted in common educational programmes and mutual recognition.

Aside from this, the demand for skills is low in Bulgaria from the industry, but much animation work is being done to create demand on the side of building owners which it is hoped will have knock on effects for the construction industry especially if adopted by public authorities for their building stock renovation. Availability of onsite trainings using mobile training centers offering task based competency could be an option here as SMEs are reluctant to invest in construction workers. The BUS app is not widely known in Bulgaria and would need to be recognized by an authority to be successful, for example the Construction Chamber.

## **5.6 Spain**

BAUHAUS, a leading brand in DIY, renovation, decoration, and gardening, committed to climate goals, has made it a priority to continue increasing the range of environmentally friendly products and to promote their sale through its stores.

To this end, within the framework of the BUSLeague project in which it participates as a partner, BAUHAUS has drawn up an action plan that includes two main objectives: to carry out

awareness-raising campaigns among its customers and to develop a training programme for its employees and installers in energy efficiency.

January 2022 saw the start of the first stage of training, consisting of 10 micro-trainings developed by the Valencia Institute of Building (IVE), also a partner in the BUSLeague project. The training is delivered online via the BAUHAUS Moodle platform and students can find different learning resources such as videos, documents, and other complementary materials. Materials which can be made open to BUSLeague partners for adaptation to National conditions.

In more detail, the course is divided into the following 10 micro-trainings:

- Introduction to EE-buildings
- How to improve the EE
- User behaviour
- Insulation
- Windows
- Thermal installations
- Existing thermal installations
- Lightning
- Home appliances
- Renewable energies

So far, the course has been very well received and more than 1500 employees and installers have registered. The second part of the course will be launched later in 2022 and will focus on the materials and products available in BAUHAUS stores, including their technical characteristics and instructions for their correct installation on site.

This latest development to come out of Spain poses an opportunity for recognition of (particularly for short learnings for DIY store workers and installers crucial to the construction ecosystem and value chain) across BUSLeague partners. Bauhaus is a household name in Europe and recognition of its training supported by IVE has been advanced by the regional government in Spain. IVE will continue to develop content which can be shared (once translated) amongst partners allowing for mobility of workers which could then in theory be facilitated through BUSLeague.

IVE with the support of the Regional Government (Generalitat Valenciana) has developed the "Registro para la Calidad del Hábitat Construido" (from now on, "[Register CHC](#)") which is a tool for general information about professionals, products or examples of good practices in the field of construction. This "Register CHC" is a recognition scheme where citizens can find accessible, transparent and free information through a website managed by the IVE and supervised by the Generalitat Valenciana, which reinforces public confidence and trust.

The "Register CHC" contains the following three areas:



Buildings



Companies & professionals



Products

Professionals or companies may register in the "Register CHC" as long as they meet the requirements set out in the area (detailed protocols are in place). In line with the objectives of the

BUSLeague project, the "Companies and professionals" area includes requirements about the skills and experience of professionals.

In general, their registration will be reviewed and renewed every 3 years. Complaints from citizens will be investigated and may result in the removal of the professional or company from the "Register CHC".

At the moment, the following categories are included within this area:

- ["Construction companies specialised in renovation"](#) (from January 2022).
- "Skilled professionals in the preparation of IEE (\*) reports" (from February 2022).
- Others (in process)

The Register for Quality in the Built Habitat is a tool for general information about professionals, products or examples of good practices in the field of construction. This initiative is supported by the General Directorate of Quality, Rehabilitation and Energy Efficiency of the Second Vice-Presidency and Ministry of Housing and Bioclimatic Architecture, with the collaboration of the Valencian Institute of Building.

In the near future, the "Register CHC" will connect to the BUSLeague objectives by including a category related to "EE-skilled professionals in home renovation". To be registered in this category and to be publicly recognised and displayed on the website, professionals will have to take a course and pass an exam, among other requirements.

The BUS app is not yet widely used in Spain but it could be used as a method of recognition in time.

## 5.7 France

Since 2007, professional organizations and public authorities have worked together on training schemes related to energy efficiency of buildings. In the case of vocational training on energy in buildings (which addresses construction as well as energy issues but also financial and administrative aspects), the French government supported the development of several initiatives that have been implemented by public and private stakeholders, in order to prepare the building sector to the overall increase of energy renovation and the installation of equipment using renewable energies.

For information, **the only nationally recognized training in the field of energy renovation**, is the [FEEBAT "Energy saving training for construction craftsmen and enterprises"](#) training program (initial and continuous training) to train and upskill several kinds of professionals in the building sector with the purpose of encouraging the decrease of energy consumption.

The [MOOC Bâtiment Durable](#) is a training platform dedicated to sustainable building. It is the result of a collaborative project of all professionals in the building sector, the [Sustainable Building Plan](#) and [ADEME](#). Training projects submitted on the platform come from a variety of structures: training organizations, associations, and universities, design offices, etc. These training courses give voice to professionals and should thus help create a community around the desire to transmit and share knowledge and skills on sustainable building. A governance charter has been established and signed by more than 25 partner organizations, to guarantee the platform's editorial line and ensure its sustainability.

The objectives of the platform are:

- to increase the skills of professionals in the building and real estate sector on energy transition and sustainable building in general (construction and renovation),
- the dissemination of knowledge to the general public on issues related to sustainable building, in particular the energy renovation of housing.

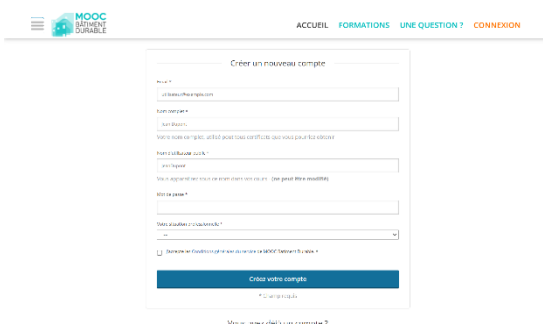


MOOC Bâtiment Durable

## Description of the e-learning interaction

To access, candidates must create a personal account, linked to a personal mail address in which they will receive the training's basic information and news. Candidates will have online access to all the academic content, activities, tasks, and notes. However, some pedagogic contents are downloadable.

The account allows candidates to apply for the trainings of interest among the available course disposal (and even the coming ones), following the current inscribed programs, and review the results of old ones. Each one of them (offered three times) has its own pre-requirements, indicated in the description, and a specific work amount. Some programs demand a final evaluation that leads often to an achievement certificate in case of approval.



Inscription to the platform and account's course list

The platform is not geographically restrictive, so the courses are available for any French speaker around the world. The candidates of the same course can exchange among them or with the pedagogic team through forums or personalised meetings hosted in this digital space.



Available Courses and description of one of them



### **Experience with the e-learning interaction**

The constant growing of candidates seems to reflect the increasing relevance of the digital tools in the building sector, especially regarding the upskilling process. Nevertheless, this is also fed by households leading their own renovation process and willing to be trained, according to [FUN](#) platform. The first diffusion campaign of the MOOC Batiment durable, for example, achieved the enrollment of 8500 users in two main courses. The first MOOC, *Rénovation performante: les clés de la rehabilitation énergétique*, received 7 500 inscriptions (60% of the professionals of the building sector) and an accomplishment rate of 31%, according to [FUN](#).

One year later (in 2017), and two diffusion campaigns after, the platform counted with 17 000 members and a satisfaction rate of 90%. In September 2019, with an accomplishment rate of 23%, the platform got around 41 500 users, 60% of them were professionals of the building sector, including a 25% of engineers and architects and a 15% of craftspeople and project managers, according to [FUN](#).

### **Link between some of the tools above at national level and the BUSLeague outputs**

In France, the construction workers trainings can be certified under two schemes: FEEBAT and MOOC Bâtiment Durable training programs.

In the first one, some workers are trained following their employers' will, which allows them to be labeled as RGE. This same principle applies to the self-employed craftspeople, who can follow the training voluntarily and offer their clients access to government's aids, once they succeed the training and they are labeled. The training permitting this in France is FEEBAT.

This Feebat Training is covered by the Certificats d'économie de l'énergie, funded by enterprises (mainly energy producers) which compensate their pollution with resources for saving energy - as can be done by a craftspeople upskilled in EE-. As well, in the case of the employees, this training can be paid by other entities like Contructrys, an skill operator. In any case, the training can be accessed for free by independent or dependent construction workers.

In the second one, the workers can access e-learning platforms as MOOC batiment durable as a way to reinforce their knowledge and deep into energy renovation topics. However, the certificate of completion of these platforms is not recognized by the market and as so, the incentive to join the training modules ends up by being personal development.

In the near future, the trainings in both schemes will connect to the BUSLeague objectives by mapping the tasks in the BUSLeague Qualification with training-supply in these schemes.

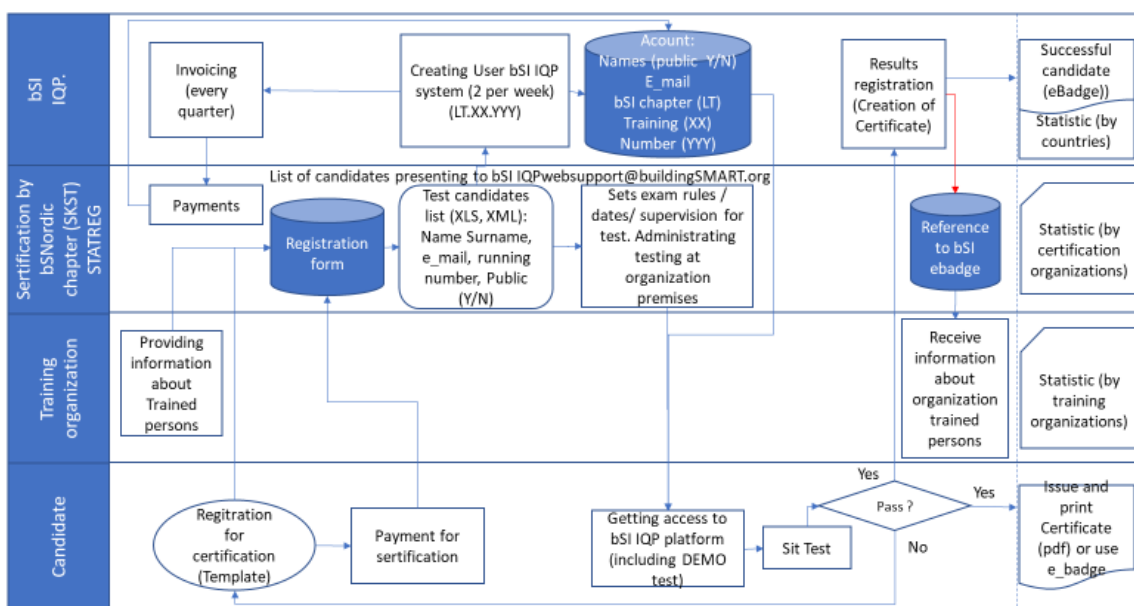
## 6 Template for personal recognition process

In order to establish personal recognition in each country based on the outcomes of the inventory, a draft process for assigning and storing personal recognition will be developed as preparation for implementation in BUSLeague Task 4.5 Implementation of the Digital Applications for Upskilling and Recognition of the Skills.

ISSO proposed the following layered canvas to map the recognition process and involved actors

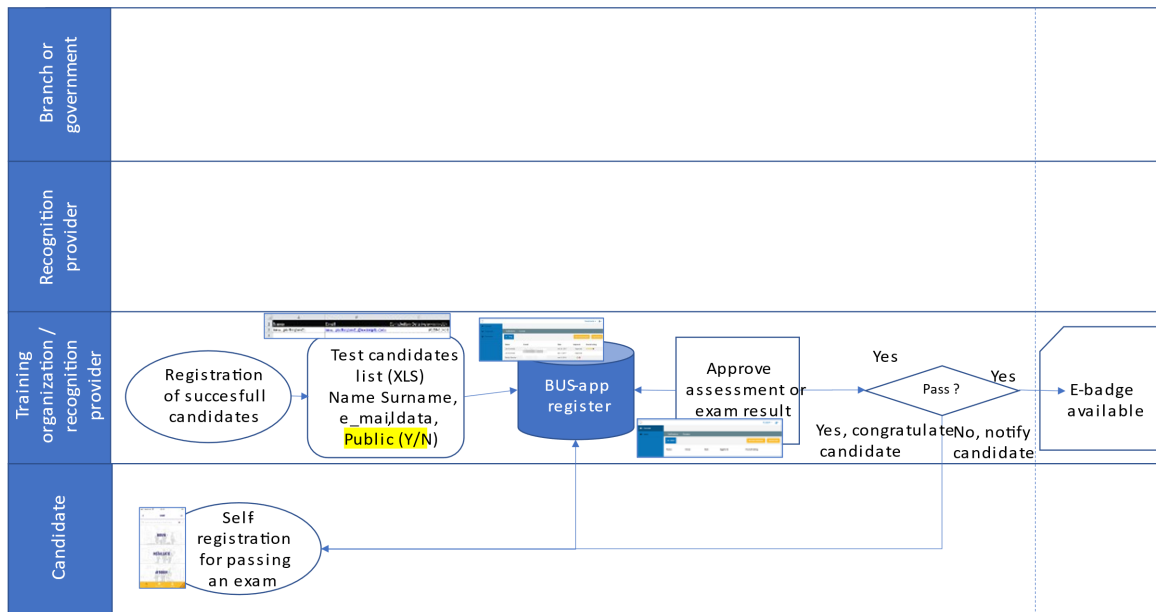
Branch or government		
Recognition provider		
Training organization / recognition provider		
Candidate		

Worked out example 1: the process for buildingSMART international and their national chapters



Based on work done by VšĮ Skaitmeninė statyba (digital construction) [www.digitalconstruction.lt](http://www.digitalconstruction.lt) 2020.02.28

Worked out example 2: the process as used in the BUILD UP Skills advisor app for informal recognition with e-badges



## 7 Conclusions

### 7.1 Conclusions for scope and format of BUSLeague Skills register

The overall aim of BUSLeague is to address and overcome the challenges of the stimulation of demand for energy skilled workforce (demand side), along with hands-on capacity building to increase the number of skilled workforce across the building design, operation and maintenance value chain (supply side). BUSLeague will achieve this objective by developing and implementing a cross European recognition of energy skills, together with upscaling successful training methods and techniques which have already been developed in previous EU and National initiatives such as BUILD UP Skills, Construction Skills. BUSLeague focusses on a blend of four elements: mutual recognition of energy skills, awareness raising, capacity building and legislative changes. Implementation will be done at country specific and regional levelsh; based on a blend of measures to stimulate demand complimented with hands-on and practical upskilling of involved local and regional workforce. In this way engagement of SMEs will be ensured.

In conclusion, this report has found, through desk research and through interviewing key partners firstly representing their own country's recognition systems and secondly projecting what a mutual recognition system might look like, (see appendices for country by country visual forecast), that a mutual recognition system based on a methodology similar to or indeed actually, the BUS app would be appropriate for BUSLeague. Take up and awareness of the BUS app is typically low across partner countries excluding The Netherlands, where it is a more widely used. The low take up or awareness in Ireland, Austria, Spain, France and Bulgaria is a challenge for BUSLeague but if partners can pilot short learnings through BUSLeague ULOs and document these on the BUS app platform, where each partner can update and maintain the platform as administrators through time allocations in the BUSLeague programme, then the concept could be proven, in turn making it easier to encourage participation of key stakeholders such as government bodies, without whom, it is thought, long term the system could not be maintained. It is also worth noting that the BUSLeague app is active in the BUSGoCircular (circular economy skills in construction), SEetheSkills (recognition of prior learning and EE-skills) and Arise (digitalisation and gamification in construction skills including the use of crypto currency) Horizon funded projects meaning that it will have more significance and build relevance over the coming 3 years.

## 8 Recommendations

Through partner collaboration in BUSLeague, a number of actions can be taken to continue piloting and prove the concept of BUS app as a system for mutual recognition in BUSLeague member countries, to their recognition providers and branches of government for short micro learnings.

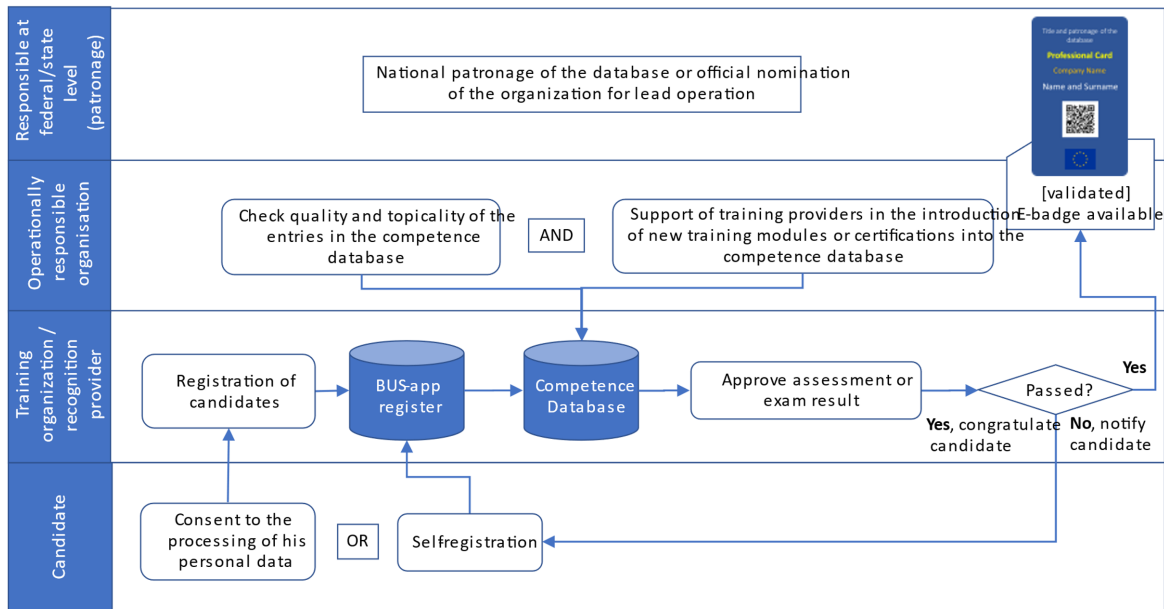
These actions are as follows:

1. Once developed, the sharing of new, or existing short training courses (with standardised ULOs) content and materials to be translated and used in other partner countries for comparison and consistency of BUSLeague scope could be piloted and rolled out. Examples of this would be the Bauhaus training recently delivered in Spain or the Austrian energy advisor training. A folder should be set up where trainings can be centrally accessed.
2. A working group of BUSLeague partners delivering training and expertise across work packages should be established and meet monthly including interlocutors for the duration of the project. The terms of reference to be established for the group would include shared learning, shared surveying methods and progressing of mutual recognition. Chairing of the group could be rotated to ensure every voice is heard.
3. The Construction Blueprint project, which TUS are a partner in, offers many free OER trainings in one central portal, see [Online Courses - Construction Blueprint](#), users must register but courses are self-directed and freely available in many languages common to BUSLeague. VET training in energy efficiency, circular economy and digitisation are also being developed and will be piloted over the coming months and will be available afterwards. The project is due to finish at the end of 2022. Construction Blueprint has 24 partners across 12 countries. Consideration should be given to incorporating these trainings onto the BUS app to provide additional relevant content.
4. National stakeholders should be regularly briefed (through meetings, webinars, newsletters and social media) on the goals and progress of partners in BUSLeague with specific regard to mutual recognition, government bodies may not instantly take on the task or indeed fund the system of recognition proposed for micro learnings but with open, transparent and regular reporting, progress can be made and the concept advanced.
5. The Bauhaus training has particular significance for BUSLeague in mutual recognition as it is a household brand and major employer and can easily influence the decision of trainees, installers and indeed other competing DIY stores across Europe. As a partner to the consortium, if Bauhaus can incorporate the BUS app into its trainings, progress around recognition and mobility of workers would be made more efficient.

## 9 Annexes

In the annexes each country with a BUSLeague implementation plan has provided a schematic overview of the foreseen personal recognition processes.

### 9.1 Austria



In Austria several routes are available to get a personal recognition within the BUSLeague project.

The first route is provided by self-registration of the person in the BUILD UP Skills advisor app. This recognition needs to be approved by the exam institute where the person successfully proved his/her competence.

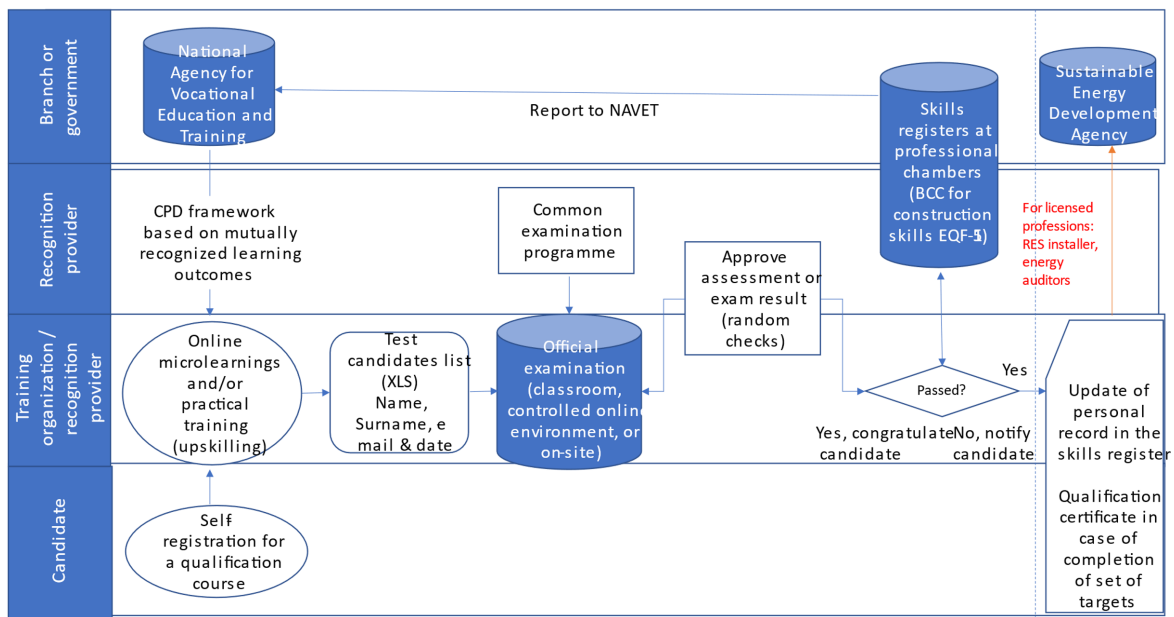
The second route is provided by registration by the training organisation (recognition provider). When this route is followed the training organisation has to get consent by the candidate to process his or her personal data. Both routes lead to the generation of a digital professional card after approval.

The mentioned recognition process is operationally guided by the Austrian Energy Agency. This guiding goes together with the following duties

- Continuously quality and topicality check of the entries in the competence database
- Support of the training providers by the introduction of new training modules or certifications into the competence database.

To underline the credibility of the personal recognition a national patronage of this database would be necessary. In Austria this could be done by the federal ministry of climate action.

## 9.2 Bulgaria

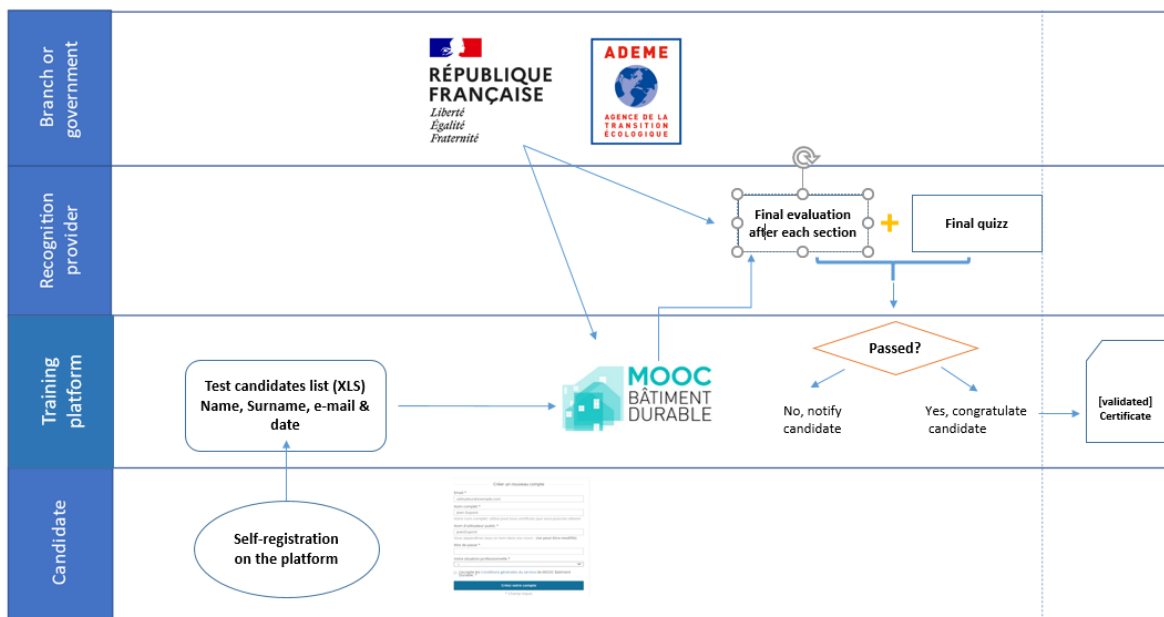


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To optimise and support that process, a platform for online microlearning should be established, potentially adapting existing EU-wide solutions as the BUILD UP Skills Advisor App or the CraftEdu database; however, these should be recognised by the national accreditation body, which, in this framework, is perceived to be the Bulgarian Construction Chamber, supported by NAVET and, presumably, by the Ministry of Education and Science. The same ULOs should also be reachable by traditional classroom and/or practical training, as the level of literacy of the construction sector workforce does not suggest full outreach of online training tools.

### 9.3 France

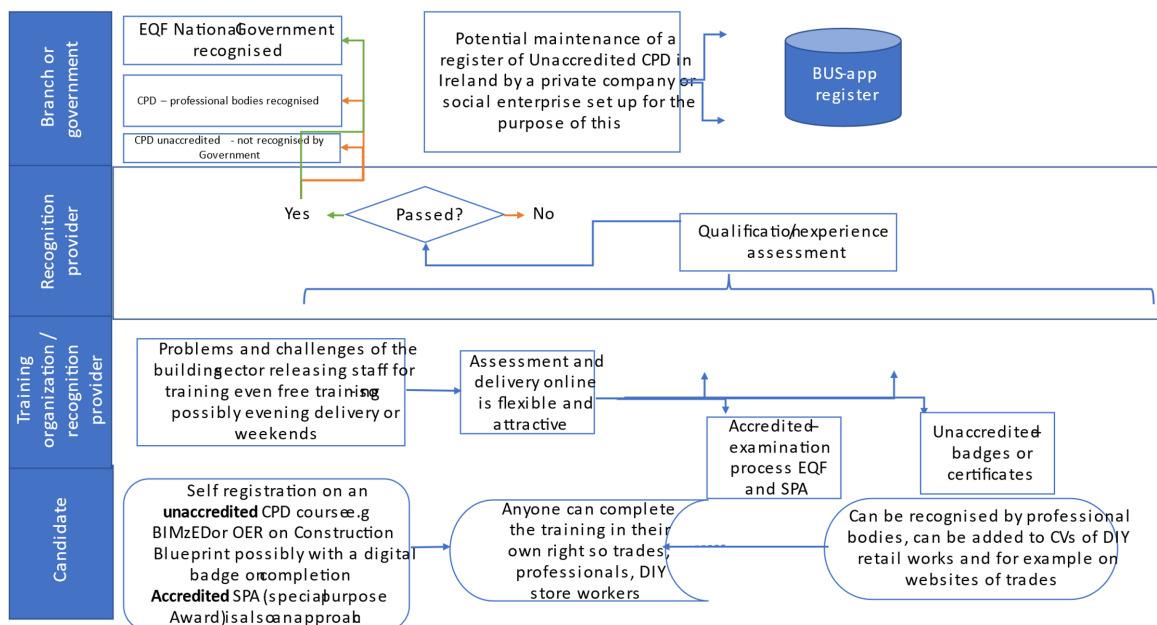


The only nationally recognized training in the field of energy renovation, is the **FEEBAT “Energy saving training for construction craftsmen and enterprises”** training program (initial and continuous training) to train and upskill several kinds of professionals in the building sector with the purpose of encouraging the decrease of energy consumption.

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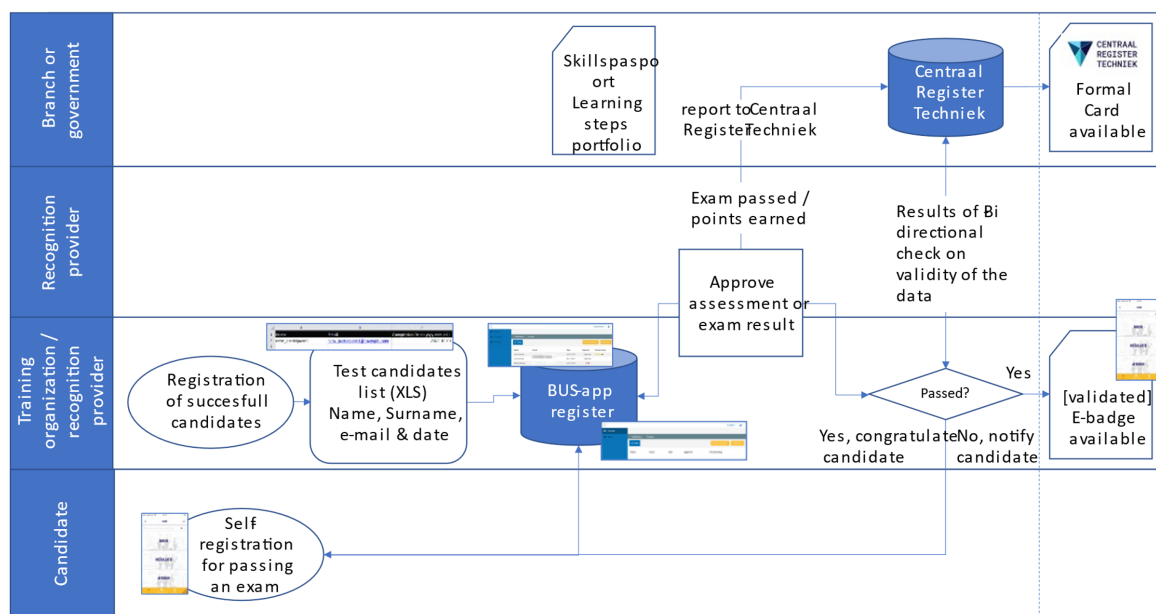
## 9.4 Ireland



In Ireland routes available to obtain personal recognition are quite traditional.

Self registration in a course accredited or unaccredited is the first step. Learners end up collecting badges, certificates etc often in hard copy and there is no one efficient way to store them all. Studies have been conducted under Quali-build recommending a national skills register and others such as under Build Up Skills recommend the BUS app only be used for accredited courses. At the time of writing only courses are promoted on the app in Ireland and not individuals with qualifications. Recognition needs to be approved by the exam institute where the person successfully proved his/her competence. A digital skillscard is not yet in existence but could be generated after approval.

## Netherlands



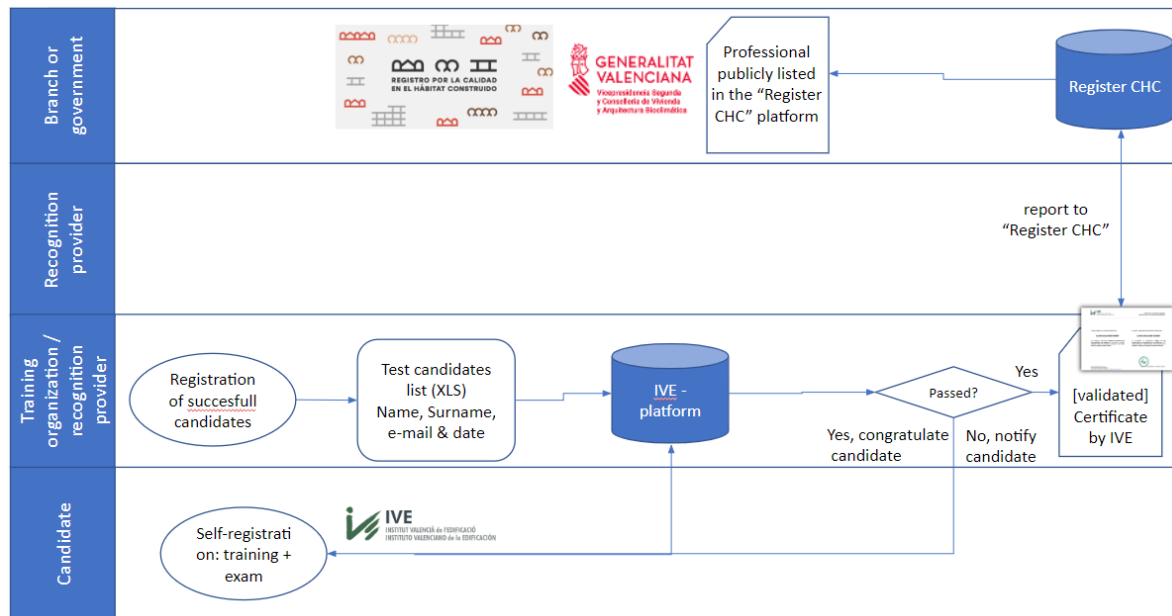
In the Netherlands several routes are available to get personal recognition.

The first route is provided by self-registration of the person in the BUILD UP Skills advisor app. This recognition needs to be approved by the exam institute where the person successfully proved his/her competence. The digital skillscard is generated after approval.

The second route is provided by registration by for example a training provider / a test center / a recognition provider. When this route is followed the digital skillscard is directly generated.

As a final step registered persons can be reported to Centraal Register Techniek. This organisation governs all formal recognitions in the Dutch installation sector. At this moment this step is only available as a proof of concept. In order to implement it a formal go from the governing body of Centraal Register and some IT-extensions are needed.

## 9.5 Spain



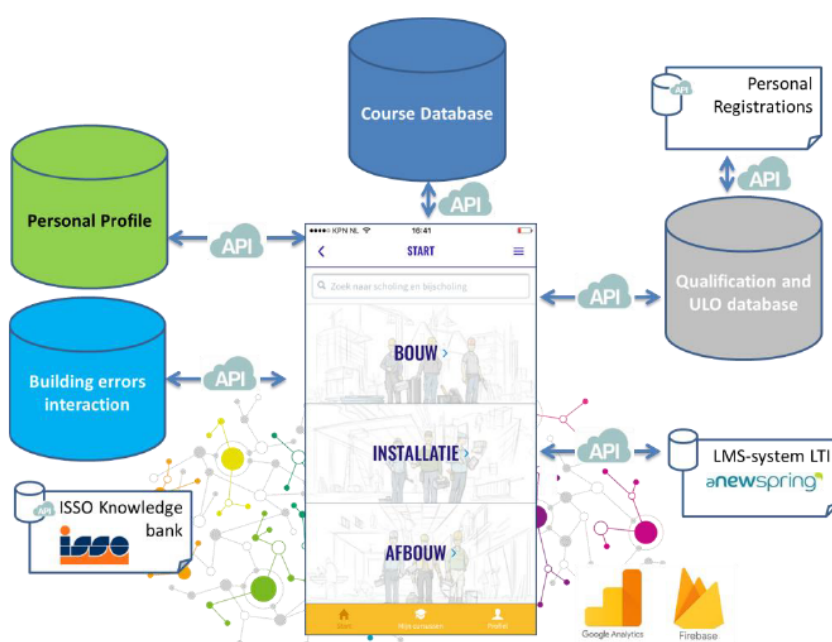
The recognition scheme proposed for Spain is called “Register CHC” (more info at section 5.6 of this deliverable).

IVE plans to create an online training about “EE-skilled professionals in home renovation”, hosted on [IVE's Moodle platform](#). Students can self-register for the course. Students who pass the exam will receive a certificate issued by IVE.

The training “EE-skilled professionals in home renovation” has been accepted as one of the categories to be included in the “Register CHC”. So, students who give their consent (in accordance with the GDPR) will be publicly recognised and displayed on the “Register CHC” website.

## 10 Applicability of the BUILD UP Skills advisor-app

For the IT-element the aim of BUSLeague is to build upon the systems delivered by H2020 project NEWCOM and the BUS-app. This includes a mobile application to locate and recognize the “skilled” workforce for the demand side. The BUS-app is developed with the purpose to inform and advise crafts and professionals working in the building sector; about upskilling opportunities around sustaining the built environment in the database. Each project and/or region/country using it, receives a dedicated part of the environment. Some essential data is shared with the purpose of mutual recognition. Examples of these are occupations, specialisms and Unit of Learning Outcomes. The BUS-app infrastructure consists of several parts as described in figure below. Based on the inventoried and assessed elements needed to facilitate recognition both at national and EU-level the use of the BUS-app is decided on national level by the national partners and at EU level by the consortium.



*Build Up Skills advisor app infrastructure (Source: NEWCOM Project)*

The following functionalities are provided in the BUS-app to facilitate personal and mutual recognition. These will be illustrated in the following paragraphs.

1. Qualification and ULO database
  - a. Qualifications
  - b. Unit of learning outcomes
2. Accreditations linked with skillscards
3. Functionality for mutual recognition

In order to get a full overview of the functionality you can view the [BUS-app maintenance manual](#).



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