



MC'S VALUE PROPOSITION

Samiedu Municipal Education and Training Federation

MC's value proposition in Finland



D4.2 MC's value proposition

Deliverable information

Report Title:	MC's value proposition - Samiedu Municipal Education and Training Federation MC's value proposition in Finland		
Responsible Project Partner:	Gob. Navarra	Contributing Project Partners:	Samiedu

Document data:	File name:	AutoCredify - WP4 Mc's value propotion Finland		
	Pages:	15	No. of annexes:	1
	Status:	final	Diss. Level:	CO
Project title:	Accelerating automotive green and digital skills with micro-credentials		GA No.:	ERASMUS-EDU-2024-POL-EXP-MICRO-CRED
Project No.:	101196000		Output No:	D4.2
Date:	Due Date:	31.3.2026	Submission date:	25.3.2026
Keywords:	Micro-credentials (MCs), automotive maintenance, skills needs, MC governance, pedagogical design			
Review by:	Maria Laura Fornaci Hanne Shapiro Liga Baltina		Review date:	April 2026
Approved by:	Liga Baltina		Approval date:	May 2026

For more information visit project's [website](#).

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Lists of abbreviations

ABBR	...	Description
AKL	Autoalan Keskusliitto	Finnish Central Organization for Motor Trade and Repairs: A key sectoral association representing automotive businesses in Finland, involved in policy dialogue, training standards, and industry development.
ECTS	European Credit Transfer and Accumulation System	A standard for measuring workload and learning outcomes in vocational and higher education, expressed in credits.
EDC	European Digital Credentials for Learning	A set of standards for digital learning credentials that are tamper-proof and easily shared across Europe, ensuring transparency and authenticity.
EQF	European Qualifications Framework	An EU-wide reference framework that helps compare qualifications across different countries and systems. It ensures transparency and portability of learning outcomes.
Jotpa	Service Centre for Continuous Learning and Employment	(Jatkuvan oppimisen ja työllisyyden palvelukeskus): A Finnish national body that coordinates funding and development for continuous learning.
KPI	Key Performance Indicator	A measurable value used to evaluate the success and impact of the pilot programs against the project's strategic objectives.
MCs	Micro-credentials	Small, targeted learning units for upskilling and reskilling, documented through verified certificates.
NQF	National Qualifications Framework	Finland's framework for structuring and classifying national qualifications, ensuring alignment with European standards (EQF).
QA	Quality Assurance	The systematic process of monitoring and verifying that the micro-credential meets defined industry standards, ensuring trust and transparency for all stakeholders.
RPL	Recognition of Prior Learning	A process that allows individuals to have their existing skills, knowledge, and competencies formally assessed and validated.
VET	Vocational Education and Training	Education and training focused on providing practical skills and knowledge for specific occupations.
VOS	State-contribution system	Education and culture funding system, governed by the Finnish National Agency for Education, operates as part of the municipal government transfer system, and finances e.g. vocational education.

Executive summary

The primary objective of WP4 was to establish a practical, labor-market-oriented framework for micro-credentials (MCs) within the Finnish automotive sector. The work focused on creating modular learning units that follow the European Council Recommendation (2022) while addressing the urgent skills gap caused by the industry's shift toward digitalization and electrification.

A significant milestone was securing the active participation of the Autoalan Keskusliitto (AKL). Their involvement as a key employer organization provided the necessary mandate for industry-wide acceptance. The project also engaged with other national Erasmus+ automotive projects and the Finnish National Agency for Education (Opetushallitus) to ensure that the development is informed by national trends, such as the Digivisio 2030 initiative and NQF/EQF frameworks.

Through stakeholder workshop and expert profiling, the project identified two critical friction points: "Operational Bottlenecks" (skill inconsistencies causing delays in workshops) and the "Education-Industry Gap" (the challenge of getting new graduates up to speed with complex technology). The resulting value proposition focuses on standardization: employers expressed a clear willingness to invest in training, provided it guarantees a uniform and verified level of competence.

As a result, two pilot programs were defined: "Electrical Diagnostics" for newly qualified technicians and "Maintenance of High-Voltage Vehicles" for general technicians. WP4 has successfully moved the project from theory to an industry-supported model. The groundwork is now laid for the technical development in WP5 and the practical testing in WP6.

1. Introduction

The objective of Work Package 4 (WP4) was to strengthen the credibility, trust, and practical implementation of micro-credentials (MCs) within the automotive ecosystems of the pilot countries. Specifically focusing on the pilot countries (Portugal, Spain and Finland) maintenance and repair (M&R) sector. Central to this work was aligning the project's outputs with the European Council Recommendation (2022) on a European approach to micro-credentials for lifelong learning and employability. During the WP4 stakeholder workshop, a sector-specific definition for automotive MCs was co-created to ensure a unified understanding of modular learning.

The focus was on identifying stakeholder needs in relation to the challenges posed by the twin transition (digital and green transition). A particular focus was placed on the urgent competence requirements and existing skill gaps created by the electrification of the industry. These include critical technical safety skills, such as working on high-voltage vehicles for example depowering high voltage vehicles, and live working.

To bridge the gap between education and the labour market, WP4 engaged a diverse range of key stakeholders to shape a value proposition for the entire Finnish automotive sector. While the initial target group included a broad spectrum from governmental institutions and Public Employment Services to student representation, the core development work in the workshop was driven by a robust representation of automotive industry experts, VET providers, and social partners. This work-life oriented involvement ensured that the resulting MC methodologies are deeply rooted in labour-market relevance.

The work package defined the core methodologies of MCs through four critical dimensions: governance, pedagogy, assessment, and financial sustainability. Special attention was paid to Quality Assurance (QA) and Recognition, ensuring that the MCs are not merely isolated training events, but standardized assets formally recognized by employers for their transparency and reliability. Finally, based on this comprehensive framework, the specific training program to be piloted was selected to meet the immediate needs of the evolving automotive landscape.

2. Conceptual Framework

Through stakeholder collaboration, a definition for micro-credentials in the automotive sector was established. This definition largely follows the general definition of micro-credentials. The framework is specifically aligned with the European Council Recommendation (2022) on a European approach to micro-credentials for lifelong learning and employability, ensuring that scalable modular learning units follow common European standards for transparency and quality. As a result of this collaboration, the sector-specific definition was formulated as:

"A micro-credential in the automotive sector refers to:

- *A digital certificate of clearly defined learning outcomes achieved by a learner after a small volume of learning.*
- *Training programs that are externally audited, and their learning outcomes are assessed based on transparent and clearly defined criteria, ensuring their quality.*
- *Learning experiences are designed to provide the learner with specific expertise, skills, and competences that meet the needs of the labor market.*
- *Micro-credentials are owned by the learner, they can be shared, and they are portable.*

- *Micro-credentials can be independent entities, or they can be stacked into larger qualifications."*

In co-creation workshop, stakeholders determined the duration of the pilot training in working days and assessed the target competence level by comparing it roughly to the levels of Finnish vocational education: Vocational Qualification (EQF 4), Further Vocational Qualification (EQF 4/5), and Specialist Vocational Qualification (EQF 5). This benchmarking ensures that the micro-credentials are designed to be compatible with the National Qualifications Framework (NQF) principles, thereby supporting the future recognition of prior learning (RPL) and credit transfer within the formal VET system.

3. The Value Proposition Approach

A value proposition refers to the narrative expression of the locally negotiated MC definition and provides the design rationale created together with stakeholders. It is a framework where a common operational model is built from locally observed challenges and needs, making the pilot phase justifiable to decision-makers. A vital element in defining the value proposition was specifically the stakeholder engagement, which ensured that the value proposition is not something defined from the top down. This also ensures labor market relevance. The Value Proposition Canvas tool (Figure 1) was utilized in shaping the value proposition. The methodology was based on customer insight (Customer Segment), where the employees' tasks requiring training were specified (Customer Jobs). Obstacles and challenges related to training were defined in the Pains box. The concrete benefits achieved by the employee were listed under Gains. Based on the customer segment, solutions for the value proposition were developed, which finally materialize in the micro-credential. For the listed Pains, solutions the micro-credential can offer were brainstormed (Pain Relievers). In Gain Creators, the benefits the achieved Gains provide for the employee were considered. The results of this work, presented in Chapter 5, validated the results of the skill anticipation conducted in WP2.

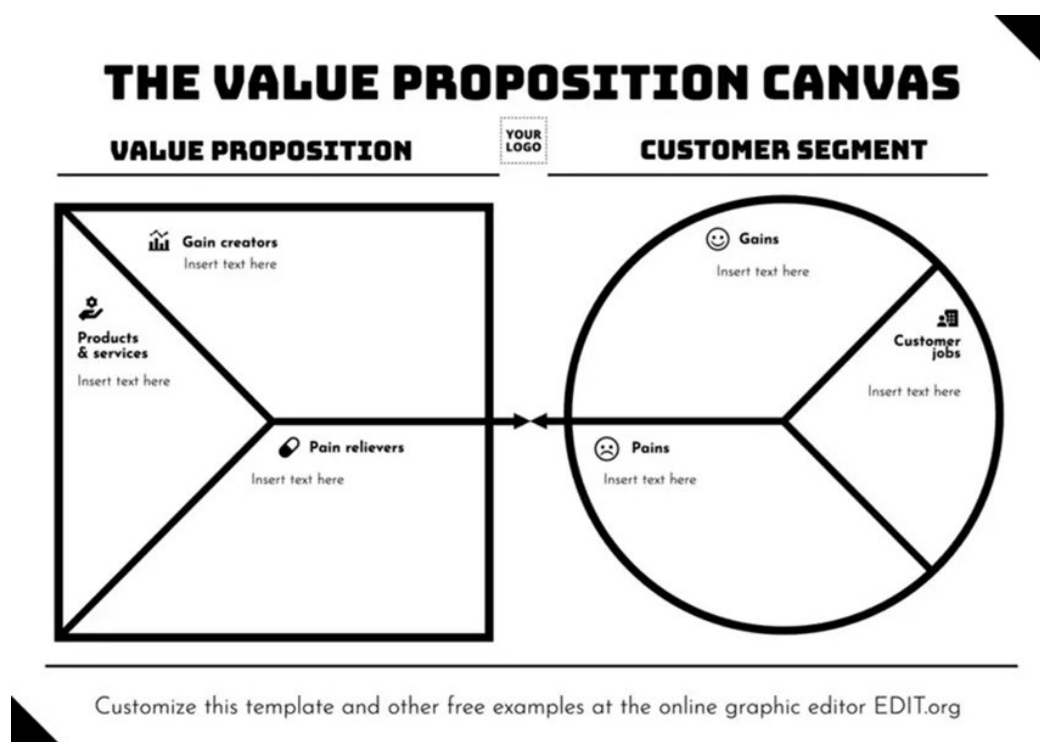


Figure 1: The Value Proposition Canvas tool

4. Stakeholder engagement

Within the work package, awareness of the project and micro-credentials was increased by participating extensively in industry events. In Finland, we attended the “Tulevaisuuden työelämä 2.0” and “Sitra Megatrends” campus events, and a national webinar by Finnish National Agency for Education. This webinar was a significant collaborative milestone, as it brought together all ongoing Erasmus+ projects within the Finnish automotive sector. This synergy ensured a harmonised approach to sectoral challenges and promoted the efficient exchange of best practices across different project networks.

The project also organized its own Awareness Raising event. It was conducted as a hybrid implementation with 27 participants. The event then continued with a Focus Group and Co-creation session, in which 20 of the experts participating continued to work on-site. Representatives included workshop entrepreneurs, automotive service managers, foremen, mechanics, students, and representatives of educational institutions. The active participation of the Autoalan Keskusliitto (AKL), acting as a key sectoral umbrella organisation representing employers, provided the necessary mandate for the industry-wide acceptance of the proposed models. Their involvement, alongside VET providers and workshop practitioners, ensured that the development remains aligned with official industry standards and labor market expectations. During the event AKL expressed their approval and promised to support micro-credentials.

Unfortunately, despite efforts, government authorities could not be involved in this event. However, the project has presented itself to representatives of the Finnish National Agency for Education in the webinar mentioned. In addition, their representative, a Counsellor of Education, will participate in an international webinar organized by the project, where they will discuss the current state of play of micro-credentials in Finland. This provides the project with an important administrative context and ensures that the model under development is in line with national development trends and the Digivisio 2030 initiative, which aims for a national ecosystem of digitally verifiable skills.

5. The Value proposition & Pilot Design

This chapter presents the analytical results of stakeholder engagement and the value proposition for micro-credentials formed based on them. The results are based on authentic labor market challenges identified by stakeholders, and they directly guide the selection of the pilot training and its operational implementation method. In this context, the value proposition serves as a strategic justification for why investment is made in a specific target group and topic. The work validated the results of the skill anticipation conducted in WP2. According to both a previously conducted survey and the results of this stakeholder engagement, the greatest friction and competence need for both employers and employees are focused on automotive diagnostics and electrical engineering. The value proposition was thus built directly around authentic problems identified by the industry, such as competence imbalances and the gap between education and working life.

5.1. Analysis of Competence Gaps and Target Group

A pre-survey based on the information gathered in previous WPs was conducted for the target groups (see Annex 4.1). Among other things, the respondents were asked to assess various challenges that the dual transition poses for the automotive sector. Four main challenges emerged from the survey responses (figure 2).

Based on the workshop discussions, stakeholders voted on two main problems from the original four (figure 2).

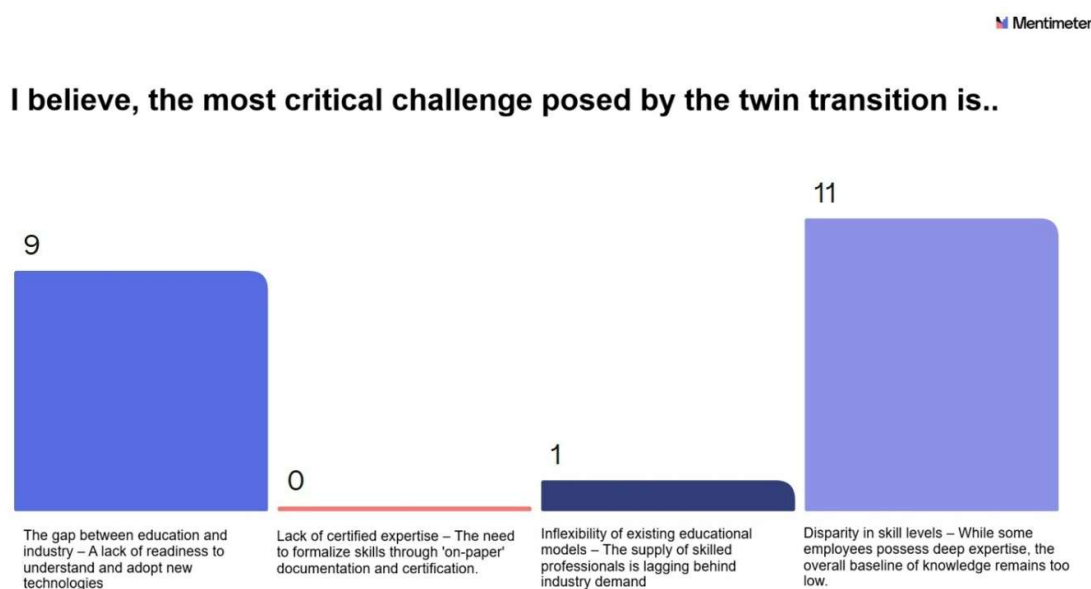


Figure 2: The most critical challenge posed by the twin transition

The most important problems selected were 1) the inconsistency of competence in workshops and 2) the lack of readiness among newly graduated mechanics to learn new technology. The stakeholder engagement revealed that the inconsistency of competence within workshops creates a multi-layered burden on the entire automotive ecosystem. These problems pose the following concrete challenges to the industry:

Daily Operational Vulnerability: Stakeholders highlighted that the inconsistency of skills is a constant challenge, which becomes particularly acute during holiday seasons or sick leaves. The absence of key personnel makes substituting their specialized expertise nearly impossible, causing significant operational risks and delays in customer service.

Challenges in Recruitment and Onboarding: The gap between education and labor market needs is visible already during studies and becomes a critical issue during recruitment. For employers, a newly graduated mechanic's lack of readiness results in direct costs: long-term mentoring and constant assistance from senior staff are perceived as highly burdensome and reduce the overall productivity of the workshop.

Economic and Psychological Consequences: This imbalance does not only affect the company's cash flow through slow throughput and potential error-related reputation damage; it also impacts workplace well-being. If performance-based pay systems are not effectively managed, "simpler" tasks may become more lucrative than complex ones, creating friction between employees and in worst case scenario further discourage the pursuit of specialized expertise.

Systemic Risk for Educational Institutions: VET providers noted that the gap also poses a threat to their own performance-based funding, which is tied to the successful employment of graduates. Ultimately, the working group concluded that these skill gaps affect society at large through increased risks of unemployment.

During the stakeholder engagement, various professional profiles of automotive technicians were created (Figure 3).

Figure 3: Professional profiles of the employees

Newly qualified technician General technician

Quote: *"Let's catch up with the expertise of the old veterans."*

Profile: Accustomed to using digital devices in their free time. Possesses basic knowledge of English. Enthusiastic about traveling for training and professional development.

Motivation:

- (1) Employability.
- (2) Income Level.
- (3) Appreciation.
- (4) Personal Growth.
- (5) Regulatory Compliance.

The individual aims to collect as many certificates as possible to solidify their employability and to justify a higher income level through documented expertise.

Quote: *"Let's push through this productive stuff."*

Profile: Workplace processes and equipment are already familiar. Prefers to do what they are accustomed to. Does not actively seek out training but attends when necessary.

Motivation:

- (1) Income Level.
- (2) Employability.
- (3) Appreciation.
- (4) Regulatory Compliance.
- (5) Personal Growth.

Work is work; money is a necessity, and they are interested in all kinds of bonuses. Training is evaluated mainly from the perspective of whether it provides access to high-yield job assignments.

Experienced technician

Quote: *"Before, cars ran on petrol and diesel; nowadays, they run on magic smoke."*

Profile: Free time is not used for studying. Proficient in the Finnish language only, Digital skills are adequate, Reluctant to travel for training.

Motivation:

- (1) Appreciation.
- (2) Employability.
- (3) Regulatory Compliance.
- (4) Income Level.
- (5) Personal Growth.

Electric vehicle technology must be learned so that there is no need to constantly ask colleagues for advice.

Electric Vehicle Specialist

Quote: *"I want to stay at the cutting edge of technology."*

Profile: High level of technical expertise. Follows industry developments actively, even during personal time. Fluent in technical English, Sets high standards and expectations for training programs.

Motivation:

- (1) Personal Growth.
- (2) Appreciation.
- (3) Income Level.
- (4) Regulatory Compliance.
- (5) Employability.

Remaining untrained is not an option.

The profiles were presented to the stakeholders according to the chart in figure 3. During the discussion, stakeholders were able to add any professional profile they desired outside the preplanned ones. Based on this collaboration, the most important target groups were selected. They were the “newly qualified mechanics” and “general technicians”, referred as so-called “basic mechanics”. They are routine-oriented workers performing basic tasks.

5.2. The Value Statement

Through the most critical problems and primary target groups indicated in the previous chapter, the working group formed two value propositions using the value proposition tool. In addition, two micro-credential pilot programs were generated with the tool: “Electronic Diagnostics” for newly qualified mechanics and “Maintenance of High-Voltage Vehicles” for general technicians. The stakeholders estimated that the designed micro-credentials sit between EQF levels 4–5 in terms of level of difficulty, focusing on a very limited area of expertise (electronic diagnostics) that a standard EQF level 4 graduate does not typically yet possess.

The value proposition was built using a Customer Segment analysis, listing employee tasks (Customer Jobs), concrete benefits (Gains), and pain points (Pains). Following this, solutions (Pain Relievers and Gain Creators) were determined, which materialize in the micro-credential being created. The result was two value propositions for micro-credentials in the automotive sector (figures 4 and 5).

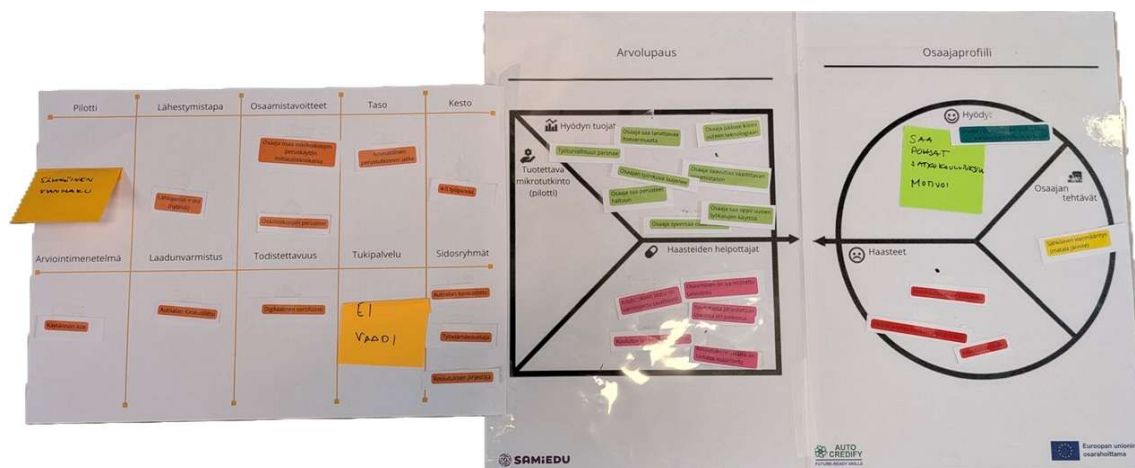


Figure 4: Value proposition for target group “Newly qualified technician” by Workgroup 1

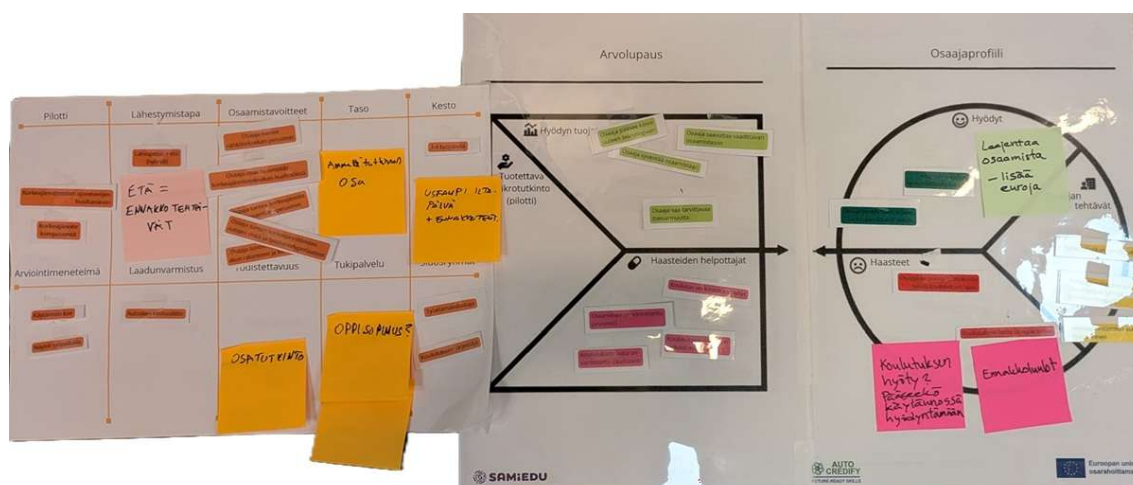


Figure 5: Value proposition for target group "General technician" by Workgroup 2

These two exercises indicate the common minimum requirements for a value statement for micro-credentials in the twin transition (digital and green transition) for the automotive sector are as follows:

Technical requirements

- the new competence is verified (assessment)
- the quality of the training is ensured (auditing)
- the training is short in duration

Content and outcome requirements

- the learner reaches the required level of competence
- the learner gets to grips with new technology
- the learner gains the necessary self-reliance
- the learner deepens their expertise

From the value propositions, the stakeholders selected newly graduated mechanics and electronic diagnostics as the primary pilot target. The justification for the choice was that basic mastery of electrical engineering and measurement equipment (such as the oscilloscope) is an absolute prerequisite, gateway competence, for all subsequent specialized expertise. Without an understanding of basic electricity, the transition to high-voltage systems, including critical safety tasks such as depowering and live working, was seen as very difficult and potentially even dangerous. Selected microcredential pilot is also suitable for upskilling to anyone in the need of these skills. The added value of the micro-credential in this instance is specifically the verification of competence through assessment and the quality assurance of the training. For employers, the value proposition focuses on the fact that the micro-credential guarantees standardized and verified competence, which speeds up the throughput of customer work and reduces the risk of errors. For employees, the value proposition offers a documented way to demonstrate specific expertise, which improves professional self-confidence and market value. Through micro-credentials, their job description expands, and employability improves. This jointly created

understanding serves as the basis for design and ensures that the pilot has broad support within the ecosystem. In the stakeholder collaboration, it was emphasized that micro-credentials are more than just individual training sessions. Microcredentials are stackable and can be integrated into existing VET (Vocational Education and Training) systems. Stakeholders highlighted that, following the pilot phase, a more detailed assessment can be made to determine whether the training would best fit as part of the existing vocational qualification for mechanics (EQF 4) or the further vocational qualification (EQF 5). The working group initially felt that the further vocational qualification (EQF 5) would be the most natural platform for micro-credentials.

Feature	Pilot 1 - Electrical diagnostics	Pilot 2 - High-Voltage vehicle maintenance
Pedagogy	In-Class + pre-assignments	In-Class + pre-assignments
Learning outcomes	Electrical fault-finding principles	Understands the fundamentals of high-voltage (HV) systems.
	Electrical Measurement techniques	Is familiar with the risks and operating principles of high-voltage systems.
	Basic use of oscilloscope	Takes high-voltage technology into account during maintenance work.
		Understands the basics of high-voltage components.
Level	EQF 4 +	EQF 5
Duration	4-5 working days	3-4 working days
Assessment	Practical test	Practical test / skill demonstrations at the workplace
Quality assurance authority	Autoalan Keskusliitto	Autoalan Keskusliitto
Certification method	Digital certification	Part of the Further Vocational Qualification
Support services	Not required	Current employment or an apprenticeship in a suitable workplace
Stakeholders involved	Education provider	Education provider
	Working life representative	Working life representative
	Autoalan Keskusliitto	

Proposed Pilot Micro-Credential Specifications (Table1).

5.3. Strategic Approaches for the MC's

Based on stakeholder engagement, key methods were defined across critical areas (governance, pedagogy, quality assurance, assessment, and financial sustainability), that guide the future MC's and the preparation of the pilot phase.

5.3.1. Governance

Governance refers to the structures, actors, and rules that ensure the micro-credential system functions. These determine the reliability, recognition, and standardizability of the system. Stakeholder engagement emphasized that the system should be open to various industry actors, such as importers and equipment manufacturers, to ensure that rapidly changing technical information is effectively transferred to the workplace. The working group discussed a model of 'Industry-led guidance' (Sectoral Steering), where a central body like Autoalan Keskusliitto (AKL) acts as a strategic bridge between the automotive companies and educational providers. This approach ensures that the training content is dictated by real-world needs. Such a model allows the ecosystem to react quickly to rapidly evolving technologies—such as new high voltage battery technologies—by validating new, standardized MC modules much faster than the traditional, more rigid curriculum reform processes.

5.3.2. Quality Assurance

Quality assurance (QA) is the mechanism that builds trust through the entire ecosystem consisting of the learner, the educator, and the employer. During the workshop, stakeholders emphasized that for MCs to hold value, they must follow a rigorous and transparent QA process. Stakeholders were unanimous that Autoalan Keskusliitto (AKL) should serve as the external auditor and quality assurer in Finland. AKL was trusted to be the authority to ensure that every issued badge meets a common industry standard. This involvement provides the necessary "seal of approval," ensuring that the competence gained is recognized and reliable across the entire automotive industry.

5.3.3. Pedagogy

Pedagogy defines the practical learning methods through which learning outcomes are achieved effectively. In micro-credentials, it is important to specifically consider labor market relevance in the selected pedagogical methods. The study methods must be suitable for a person currently in employment.

For the pilot project, stakeholders chose a hybrid model as the approach. Regarding the total duration, they saw the scope of the micro-credential as 4–5 working days, i.e., approximately 1.1–1.5 ECTS. By a hybrid model, the working group meant a structure consisting of preparatory distance learning assignments and actual contact teaching days. The preparatory assignments allow for flexible participation alongside work and orient the participant to the topic in advance. The working group emphasized the importance of including practical, hands-on exercises that directly support the specific training topics. The discussions during the workshop also highlighted the value of peer-to-peer learning; it is essential that the contact days provide a platform for participants to discuss and learn from their colleagues' professional experiences.

5.3.4. Assessment

Assessment is the process of verifying that learning outcomes have been achieved. Stakeholders emphasized that this is specifically the most important offering of micro-credentials. One of the most significant challenges in training an employee is the uncertainty of whether the training provides concrete benefits for the company. There are several methods available for assessment, such as various simulated exercises or a theory-weighted exam measuring understanding. The selected assessment method must be suitable for the micro-credential in question, which requires pedagogical expertise from the designer of the micro-credential. The working group concluded that the

most effective way to assess an MC is through a practical demonstration of skills if it is suitable for the MC in question.

The working group felt that the best guarantor of trust in the pilot micro-credential is competence verification based on a practical demonstration, which in this case is built around a realistic troubleshooting scenario. The goal is to evaluate the learner's troubleshooting logic and systematic approach, rather than just the final outcome. This ensures that the participant can apply the same logic across various vehicle brands and technologies. Regarding distance assignments, they hoped for a structure with tasks where the participant receives feedback. The assessment process will be documented using standardized metadata to ensure that the resulting badges can be issued as European Digital Credentials for Learning (EDC).

5.3.5. Financial Sustainability

Financial sustainability refers to models that ensure the continuity of the micro-credential system and its establishment as part of the industry's permanent training offering after the project funding ends. Currently, the most typical form of continuing education in Finland is employer funded. Labor market representatives in the working group expressed a clear willingness to pay for micro-credentials, provided that the system produces immediate operational utility. Critically, this willingness is tied to standardization and quality assurance: employers are prepared to invest when they can trust that the micro-credential guarantees a uniform level of competence, regardless of which VET provider issued it. This "industry-standard" badge reduces the employer's risk and ensures that the investment leads to measurable improvements in workshop throughput.

Another possibility for the system is integration into the state-contribution system (VOS), although this would likely limit micro-credentials to official vocational education providers. The project will also explore funding opportunities through the Service Centre for Continuous Learning and Employment (JOTPA), whose mandate is to promote the availability of skilled labor. Additionally, a model where the employee covers part of the cost in exchange for a personal, portable certificate could be considered.

6. Conclusions

Work Package 4 successfully established a demand-driven foundation for micro-credentials in the automotive sector. By engaging key stakeholders and utilizing expert profiles, the project identified the critical need for flexible, quality-assured training that addresses real-world "bottlenecks," such as the skills gap in electrical diagnostics and the onboarding of new mechanics. The consensus reached with Autoalan Keskusliitto (AKL) and other partners confirm that micro-credentials are seen as a viable solution to improve workshop efficiency, employee well-being, and sectoral competitiveness.

In conclusion, WP4 has moved the project from theoretical definitions to a strategic value proposition supported by the industry. With this mandate, the project is now positioned to proceed to the development phase. The immediate next steps involve Work Package 5 (WP5) for technical infrastructure and Work Package 6 (WP6), which will carry the primary responsibility for the practical design and execution of the pilots. In WP6, the project will design the specific features of the training (learning pathways and course content) and launch the actual piloting to translate this strategic groundwork into concrete, measurable impact within the automotive sector.

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ANNEX 4.1. Pre-survey for stakeholders

Vehicle industry expert forum pre-survey for companies in the industry

AutoCredify project is developing a skills prediction method for the automotive industry. The goal is to identify emerging skills needs and turn them into practical learning solutions.

At the core of the project are scalable small competence units (micro-degrees, micro-credentials) based on reliable assessment and financial sustainability. They aim to produce certified expertise for the industry and facilitate retraining and further training as well as employment and recruitment.

The project focuses on the automotive sector's digital and green transition (electrification of the sector) skills needs.

It is particularly important to move the project forward in a working-life-oriented manner, and we need your help with this. Please answer the survey below. The answers will help prepare the Micro-Degree Workshop section of the expert forum event.

* Obligatory

1. Name, company and phone number*

2. Current status*

Is your company already working on hybrid/electric vehicles or do you have plans to start?

- ☐ Yes, we are already working on them
- ☐ We are just getting started.
- ☐ We have plans for the near future
- ☐ Not at the moment
- ☐ Other

What are (or have been) the most important challenges regarding the electrification and digitalization of the industry for your company?

Choose the 3 most suitable options.

- ☐ Employees' fear or other resistance to new learning
- ☐ Readiness for new technology among those transitioning from vocational training to working life
- ☐ Finding ready-made experts
- ☐ Availability of training and/or retraining
- ☐ Long duration of existing training courses
- ☐ Releasing employees for training
- ☐ Other

How would you rate the level of expertise of your current mechanics in working with electric vehicles? Select all appropriate options.

- ☐ Many people have the basics, but deeper diagnostics are lacking.
- ☐ 1–2 key people with deeper expertise.
- ☐ Everyone would need at least a quick basic upgrade to new technology.
- ☐ Other

Do you think employees need short refresher courses to deepen their skills and stay up to date?

- ☐ Yes ☐ No

Have you noticed any shortcomings in the training/education system you currently use? What kind of shortcomings?

The motivation level of students your company accepts for internships is...

- ☐ Overall very good
- ☐ Good, although personal and/or professional maturity is often lacking
- ☐ Not very good; in addition to lack maturity, lacks commitment, initiative, and teamwork skills
- ☐ Other

Your company employee's motivation level is...

- ☐ Overall very good
- ☐ Good, although personal and professional maturity is often lacking
- ☐ Not very good; in addition to lack of maturity, lacks commitment, initiative, and teamwork skills
- ☐ Other

Had you heard of small learning units / micro-degrees / micro-credentials before this project?

- ☐ Yes
- ☐ I don't

If yes, in what context?

3. The shift of the industry toward electrification *

Which of the following topics do you consider to be VERY URGENT in a short hybrid electric vehicle / electric vehicle training (HEV/EV)? Choose the 3 most important ones. Choose 3 options.

- ☐ High voltage safety and protocols
- ☐ Battery diagnostics and management systems (BMS)
- ☐ Preventive and corrective maintenance of electric motors
- ☐ Power electronics diagnostics (inverters, converters)
- ☐ Charging infrastructure and connector standards
- ☐ Electric vehicle damage repair (structures and batteries)
- ☐ ADAS systems (detection, calibration, repair, safety, etc.)
- ☐ Other

What do you think is the best format for a short HEV/EV training?

- ☐ 100% face-to-face teaching (practice-focused)
- ☐ Multimodal teaching (online theory, practical training in person)
- ☐ 100% online teaching (if the subject is such that theoretical studies is sufficient)

What is the ideal duration for a short HEV/EV training course to bring real value?

- ☐ 1-2 working days
- ☐ 2-3 working days
- ☐ 4-5 working days
- ☐ Other

Organize the following skills by priority when recruiting (most important to the top)

- Technical skills
- Technical knowledge
- Soft skills (teamwork, punctuality, customer service, etc.)
- Digital skills (use and knowledge of technologies)
- Proven qualifications (diplomas, etc. Certified training)

In which areas would small competence units bring the greatest benefit to your company? Organize the benefits in order of importance (most important at the top)

- Providing certified training for employees
- Facilitating recruitment
- Company image / marketing advantage
- Possibility to reduce subcontracting work
- Saving on training costs
- Shortening the orientation period

At what level would you feel the greatest need for micro-degrees?

- ☐ Integrated into a professional undergraduate degree/level
- ☐ As a continuation of a basic vocational qualification
- ☐ For more in-depth specific information

Micro-degrees are characterized by the need of a high-quality certification of competence. Choose what kind of tests do you think best reflect competence? Choose the 3 that you think are most suitable.

- ☐ Controlled multiple-choice exam
- ☐ Practical exercise in training
- ☐ Simulation exercise
- ☐ Verification of competence in the workplace. For example, filming a video or evaluating a certified colleague
- ☐ Portfolio - e.g. 5-10 completed work orders and reports on work done
- ☐ Other

In addition to competence, the quality of education in micro-degrees should also be audited regularly. Which party would you feel would increase the reliability of the system?

- ☐ Karvi (National Centre for Educational Evaluation) / Finnish National Board of Education
- ☐ AKL (Finnish Automotive Federation)
- ☐ Other

In your opinion, should micro-degrees be included as part of degree education, private education provision, or both?

- ☐ Only part of degree programs
- ☐ Only for so-called hard money training
- ☐ To both

Could the clear evidence of competence provided by a micro-degree (e.g. easier recruitment or shorter orientation time) compensate for the potential increase in the price of training for your company?

If micro-degree education were supported by the state, where should the support be primarily allocated?

- ☐ For the costs of the training provider (lower course fees)

- ☐ Training compensation paid to the company (compensation for the mechanic's absence from the work line)
- ☐ Other

Open feedback. Write down any issues that come to mind that you would like to address regarding the future of the field and education.



MC'S VALUE PROPOSITION

Samiedu Municipal Education and Training Federation

MC's value proposition in Finland

D4.2 MC's value proposition

Deliverable information

Report Title:	MC's value proposition - ATEC – Associação de Formação para a Indústria MC's value proposition in Portugal		
Responsible Project Partner:	Gob. Navarra (WP lead)	Contributing Project Partners:	ATEC

Document data:	File name:	AutoCredify - WP4 Mc's value proposition Portugal		
	Pages:	21	No. of annexes:	1
	Status:	final	Diss. Level:	CO
Project title:	Accelerating automotive green and digital skills with micro-credentials		GA No.:	ERASMUS-EDU-2024-POL-EXP-MICRO-CRED
Project No.:	101196000		Output No:	D4.2
Date:	Due Date:	21.3.2026	Submission date:	21.5.2026
Keywords:	Micro-credentials (MCs), automotive maintenance, skills needs, MC governance, pedagogical design			
Review by:	Maria Laura Fornaci Hanne Shapiro Liga Baltina		Review date:	May 2026
Approved by:	Liga Baltina		Approval date:	May 2026

For more information visit project's [website](#).

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Executive summary

Within the framework of Work Package 4 (WP4) of the AutoCredify project, Portugal conducted a stakeholder engagement process aimed at defining the value proposition and pilot design for micro-credentials in the automotive sector, with particular focus on the challenges arising from vehicle electrification and the green and digital transition.

The national activities combined awareness-raising and co-creation methodologies. As a first step, ATEC organised a national webinar entitled *“Micro-credentials and the Future of Skills in the Automotive Sector”*, bringing together stakeholders from vocational education and training, industry, public authorities, and sectoral organisations to discuss the role of micro-credentials in supporting workforce transformation. This initiative was followed by a focus group and co-creation workshop involving representatives from training providers, OEMs, SMEs, sectoral organisations, public employment services, and worker representatives.

The workshop identified several critical challenges affecting the sector, particularly the lack of standardisation and recognition of competencies related to electric mobility, the misalignment between existing training provision and operational needs, and the structural barriers limiting access to upskilling and reskilling opportunities. These challenges are especially relevant in the context of the rapid technological transition towards electric and hybrid vehicles, which is creating increasing pressure on companies and technicians to adapt existing competencies.

Through a structured co-creation process involving problem mapping, persona development, and Value Proposition Canvas exercises, stakeholders identified experienced automotive technicians working in multi-brand workshops as the priority target group for the pilot. Discussions highlighted the urgent need for short, modular, practice-oriented, and sector-recognised learning solutions capable of supporting the transition from internal combustion engine technologies to high-voltage electric vehicle systems.

The resulting value proposition focuses on micro-credentials that combine practical relevance, labour-market alignment, and digitally verifiable certification. The proposed model aims to support rapid workforce adaptation while increasing employer confidence through reliable competence verification and sectoral recognition mechanisms.

The proposed pilot centres on a “High-Voltage Technician” micro-credential integrated into a progressive and stackable learning pathway inspired by international industry practices, particularly qualification models used by German OEMs. The pathway includes a foundational competence level, an intermediate preparatory stage (EIP – Instructed Person in Electricity), the High-Voltage Technician micro-credential, and a future advanced High-Voltage Specialist level.

Stakeholders emphasised the importance of rigorous practical assessment, hybrid competence validation models combining training-centre assessment with possible company involvement, harmonised competence standards, robust quality assurance mechanisms, and continuous stakeholder participation in governance and monitoring processes. The discussions also highlighted the importance of digital verification, portability, and future potential articulation with the Portuguese National Qualifications System and Europass-related digital credential ecosystems.

The outputs of this process provide the foundation for the next phases of the AutoCredify project, particularly the detailed design and implementation of pilot activities under subsequent work packages.

8. Introduction

The AutoCredify project aims to accelerate the development of green and digital skills in the automotive sector through the design and implementation of micro-credentials. Work Package 4 (WP4) focuses on defining the value proposition of micro-credentials and establishing the methodological foundations for their implementation in pilot countries.

In Portugal, WP4 activities focused on the maintenance and repair (M&R) segment of the automotive sector, with particular emphasis on the challenges arising from the electrification of vehicles. These challenges require rapid upskilling and reskilling of the existing workforce, especially technicians currently working with internal combustion engine vehicles.

To address these needs, a stakeholder workshop combining a focus group and co-creation session was organised at ATEC on 31 March 2026. The objective was to gather input from key actors in the ecosystem and co-develop a pilot concept for micro-credentials that is both relevant to the labour market and feasible to implement.

9. Conceptual Framework

The development of micro-credentials within the AutoCredify project is aligned with the **Council Recommendation of 16 June 2022 on a European approach to micro-credentials for lifelong learning and employability**. This framework emphasises transparency, quality assurance, portability, and relevance to labour market needs.

In this context, micro-credentials are understood as **short, modular learning units** that certify the achievement of specific learning outcomes and can be accumulated over time to support continuous professional development.

A central concept in WP4 is the **value proposition**, defined as the articulation of how micro-credentials respond to concrete needs of target users and stakeholders. This approach ensures that the design of micro-credentials is grounded in real-world challenges and delivers tangible benefits for both individuals and organisations.

The Value Proposition Canvas methodology was used to structure the analysis, linking user needs (jobs, pains, gains) with corresponding solutions (learning design, assessment, recognition, and delivery models).

10. Methodology

The methodology followed in Portugal was based on the WP4 methodological guidelines and structured around a co-creation approach involving key stakeholders.

The workshop was organised into five main steps:

1. Definition of micro-credentials

Participants identified key elements and compared them with the European definition.

2. Problem mapping

Stakeholders identified and prioritised the most critical challenges related to electrification.

3. Target user definition (personas)

Different user profiles were developed to understand needs, motivations, and barriers.

4. Value proposition development

The Value Proposition Canvas was used to connect user needs with micro-credential design.

5. Consolidation of results

Inputs were synthesised to inform the pilot design.

The session combined individual reflection, group work, and plenary discussions, ensuring both diversity of perspectives and convergence towards shared priorities.

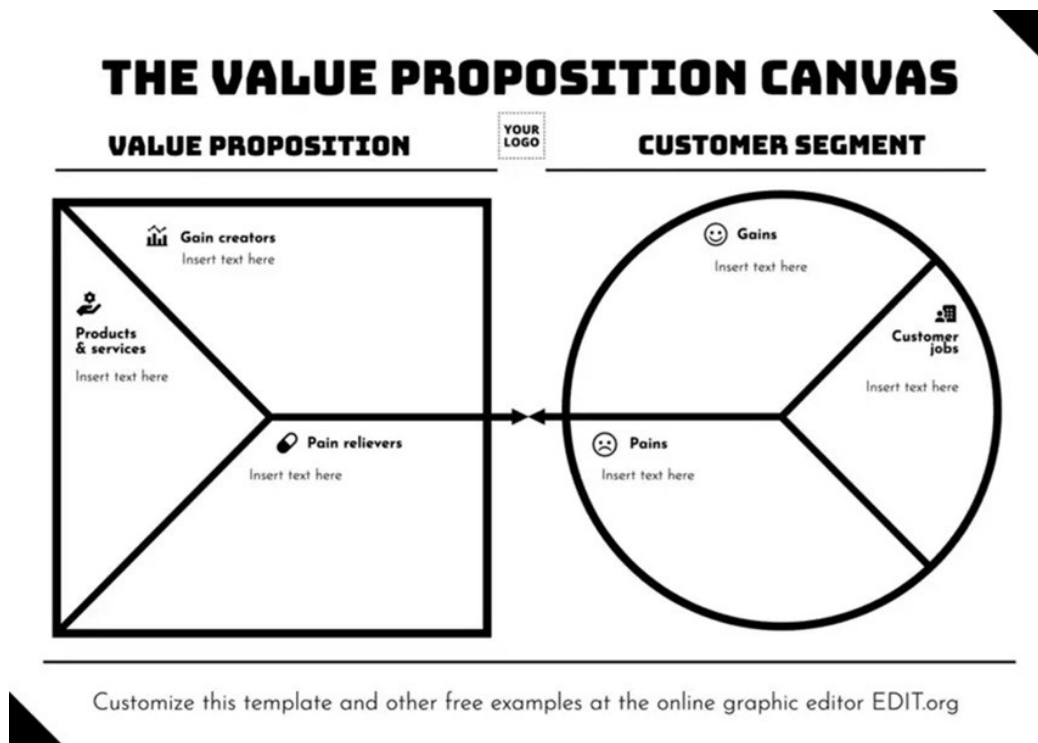


Figure 2: The Value Proposition Canvas tool

11. Stakeholder engagement

Stakeholder engagement activities in Portugal combined awareness raising, ecosystem mobilisation, and co-creation methodologies to ensure that the proposed micro-credential model reflects real labour market needs and sectoral priorities.

As a first step, a national webinar entitled “Micro-credentials and the Future of Skills in the Automotive Sector” was organised by ATEC on 17 March 2026, two weeks before the focus group session. The webinar gathered stakeholders from the automotive ecosystem, including training providers, companies, public authorities, sectoral organisations, and education experts, and aimed to raise awareness about the role of micro-credentials in addressing the challenges associated with electrification and digitalisation in the automotive sector.

The webinar addressed topics such as:

- the role of micro-credentials in vocational education and training,
- new competence requirements in the automotive sector,
- alignment between qualifications and employability,
- and the relationship between micro-credentials and the Portuguese National Qualifications System.

The event also contributed to positioning the AutoCredify project within the national discussion on lifelong learning and skills development, while preparing stakeholders for the subsequent co-creation activities.

Following this awareness-raising phase, a workshop brought together a diverse set of stakeholders representing the automotive ecosystem in Portugal, including:

- vocational education and training providers,
- automotive companies (OEMs and SMEs),
- sectoral association representatives,
- public employment services,
- and worker representatives.

This diversity ensured that both training supply and labour market demand perspectives were reflected in the pilot design process.

An additional relevant stakeholder — the national body responsible for the National Qualifications System (SNQ) and National Qualifications Catalogue — was not directly represented in the workshop but has been involved in the broader project context. This entity is considered strategically important for the future alignment between micro-credentials and formal qualification pathways.

12. Main Results of the Focus Group and Co-creation Workshop

12.1. Locally Agreed Definition of Micro-Credentials

Based on stakeholder inputs, a consolidated definition of micro-credentials has been developed:

A micro-credential is a digitally verifiable record of learning outcomes acquired through short-duration modular training (indicatively up to 40 hours), aimed at working professionals seeking to update or deepen specific competencies relevant to the automotive sector.

The competencies are assessed against defined criteria, with a strong practical component and direct applicability in the workplace.

Micro-credentials are stackable and may be integrated into progressive pathways for specialisation and professional development.

They are issued by accredited entities aligned with sectoral standards and needs, ensuring their recognition and professional relevance.

Portuguese version of the locally Agreed Definition of Micro-Credentials:

Microcredencial é o registo, verificável digitalmente, de resultados de aprendizagem obtidos através de formação modular de curta duração (duração indicativa de até 40 horas), dirigida a profissionais ativos que pretendem atualizar ou aprofundar competências específicas relevantes para o setor automóvel.

As competências são avaliadas com base em critérios definidos, com forte componente prática e aplicabilidade em contexto de trabalho.

As microcredenciais são acumuláveis e podem integrar percursos progressivos de especialização e desenvolvimento profissional.

São emitidas por entidades acreditadas, alinhadas com referenciais e necessidades do setor, garantindo o seu reconhecimento e relevância profissional.

12.2. Key Challenges and their Impact

To identify the most critical challenges affecting the automotive sector in the context of electrification, stakeholders participated in a structured problem-mapping exercise during the co-creation workshop.

Participants were invited to reflect on the main difficulties faced by the sector, particularly regarding:

- fear of and access to learning opportunities,
- school-to-work transition,
- talent attraction and retention,
- and upskilling and reskilling needs.

A set of pre-prepared challenge cards was distributed, alongside blank cards allowing participants to introduce additional issues based on their organisational context and experience. Each participant was asked to identify the single most critical problem for their organisation and to reflect on whether micro-credentials could contribute to addressing it.

Participants then briefly justified their choices by discussing:

- who is most affected by the problem,
- when the friction occurs,
- and what measurable consequences it creates.

The identified challenges were subsequently clustered by the moderator according to their interconnections and underlying causes. This process enabled the group to move from isolated operational issues towards broader systemic challenges affecting the sector.

Three priority challenges emerged from this exercise:

1. Lack of standardisation and recognition

There is no clear alignment between training certifications and industry requirements for electric vehicle competencies.

Impact: Reduced trust in training outcomes and difficulty in recognising competencies across organisations.

2. Misalignment between training provision and operational needs

Existing training is often too long, insufficiently modular, or difficult to access.

Impact: Delays in workforce adaptation and reduced capacity to respond to technological changes.

3. Structural barriers to upskilling

Constraints such as cost, lack of time, and limited access to equipment hinder participation in training.

Impact: Limited adoption of training and slower transition to electric mobility.



Figure 3: Discussions around the key challenges and impact

12.3. Target Groups and Personas

Methodological Approach

To identify the target users most affected by the challenges identified in the previous step, participants were divided into three working groups and asked to develop predefined personas using the provided Persona Canvas template.

The following profiles were assigned:

- **Group 1** – Experienced automotive maintenance technician working in a multi-brand workshop

- **Group 2** – Unemployed worker aged 45+ undergoing professional transition
- **Group 3** – VET graduate entering the labour market

Participants were informed that personas could be adapted to the local context or expanded according to the needs emerging from previous discussions. General facilitation rules were established to ensure consistency and focus during the exercise:

- short and concrete answers,
- one idea per note,
- distinction between evidence and assumptions,
- and avoidance of overly broad target groups.

Each group selected a spokesperson to present their persona and discuss:

- which profile faces the most urgent challenge in the Portuguese context,
- where micro-credentials could create the greatest impact,
- and which profiles would benefit the least.

A rapid voting exercise was then conducted to prioritise the personas and connect them to the challenges identified in the previous step.

Results – Priority Target Groups

The exercise identified **experienced automotive technicians working in multi-brand workshops** as the primary target group for the pilot. This profile received the strongest stakeholder support due to the urgent need to transition from internal combustion engine technologies to electric and high-voltage systems.

This profile represents professionals with significant experience in internal combustion engine vehicles who now require rapid upskilling in electric mobility technologies.

Key needs identified include:

- short and modular training,
- practical and workplace-oriented learning,
- recognised certification,
- and flexible delivery compatible with working schedules.

Key barriers include:

- limited availability due to operational workload,
- lack of confidence in existing training offers,
- and uncertainty regarding recognition and progression.

The following secondary target groups were also identified:

- Unemployed adults undergoing reskilling

This profile represents adults seeking reintegration into the labour market through reskilling pathways aligned with emerging technologies.

- Recent VET graduates entering the labour market.

This group represents young professionals with theoretical foundations but requiring practical specialisation and labour market differentiation.

12.4. Value Proposition

Methodological Approach

Following the persona exercise, participants were divided into two sub-groups and asked to develop a Value Proposition Canvas using the information generated in the Persona Canvas exercise.

Participants worked from the left side of the canvas (customer segment) towards the right side (value proposition), identifying:

- customer jobs,
- pains,
- gains,
- pain relievers,
- gain creators,
- and products and services.

The exercise aimed to connect the identified sectoral challenges with concrete learning solutions and pilot design elements.

Each group then presented its proposal to the plenary session, followed by a rapid voting exercise to identify the value proposition considered:

- the most urgent,
- the most aligned with the Portuguese automotive context,
- and the most supported by stakeholders.

The selected value proposition became the basis for the pilot design.

Value Statement

Micro-credentials enable experienced automotive technicians to rapidly acquire practical competencies in electric vehicle technologies through short, modular, and digitally verifiable learning experiences aligned with labour market needs.

For learners, they support professional updating, recognition of competencies, employability, and progressive specialisation pathways linked to emerging high-voltage vehicle roles.

For employers, they provide a rapid response to technological change, reduce workforce downtime, support continuous workforce upskilling, and increase confidence in verified competencies through sector-relevant certification.

The model also enables accumulation and potential future capitalisation towards broader learning and qualification pathways, while maintaining flexibility to adapt quickly to emerging professional requirements.

The proposed micro-credential model addresses the challenges identified during the workshop by offering experienced automotive technicians short, modular, and workplace-oriented learning pathways specifically designed to support the transition from internal combustion engine vehicles to electric and high-voltage systems.

The model was conceived as a direct response to the difficulties identified by stakeholders, particularly the mismatch between existing training provision and operational realities in the automotive maintenance and repair sector. Stakeholders highlighted the need for training solutions that are practical, rapidly deployable, and compatible with the time and workload constraints faced by technicians and companies.

For learners, the proposed model creates value by:

- enabling rapid acquisition of competencies relevant to electric mobility,
- supporting continuous professional updating,
- improving employability and career progression opportunities,
- providing recognised and digitally verifiable certification,
- and creating progressive pathways for specialisation through stackable learning units.

The practical and modular structure of the micro-credential was also considered essential to reduce barriers to participation and facilitate integration with professional activity.

For employers, the model creates value by:

- accelerating workforce adaptation to technological change,
- reducing downtime associated with lengthy training programmes,
- supporting continuous workforce upskilling,
- increasing confidence in verified competencies,
- and ensuring closer alignment between training provision and operational needs.

Stakeholders also identified sectoral recognition as a critical element for ensuring trust and adoption. The proposed model therefore combines practical assessment, recognised certification, and alignment with sectoral standards in order to strengthen the signalling value of competencies in the labour market.

Finally, the stackable nature of the proposed micro-credentials was considered strategically important, as it enables progressive professional development and creates future opportunities for accumulation or articulation with broader qualification pathways.

13. Pilot Description

13.1. Pilot Rationale and Objectives

The pilot developed within WP4 responds directly to the urgent upskilling needs identified by stakeholders in the Portuguese automotive maintenance and repair sector. The transition towards electrification is creating significant pressure on companies and technicians, particularly in relation to safety, diagnostics, and intervention on high-voltage systems.

Stakeholders consistently highlighted that experienced technicians working primarily with internal combustion engine vehicles are increasingly required to intervene in electric and hybrid vehicles without having access to short, structured, and sector-recognised training pathways adapted to their operational reality.

The pilot therefore aims to design and test a micro-credential that:

- supports the transition of experienced technicians towards electric mobility,
- enables rapid acquisition of practical and safety-related competencies,
- and establishes a recognised and trustworthy competence verification model for the sector.

The pilot was also conceived as a response to the identified mismatch between existing training provision and the operational constraints of companies, namely limited time availability, workload pressures, and the need for immediately applicable competencies.

13.2. Learning Pathway and Stackability

Stakeholders agreed that the pilot should not be developed as an isolated training action, but rather as part of a broader modular and progressive learning pathway aligned with professional progression in the automotive sector.

The workshop discussions highlighted that, in the absence of a consolidated national regulatory framework or standard specifically defining qualification pathways for high-voltage interventions in the automotive sector, the proposed model should draw inspiration from existing international references and industry practices already adopted by automotive manufacturers (OEMs). In particular, stakeholders referred to the German framework for high-voltage vehicle qualification as an important benchmark for structuring progressive competence levels and safety requirements.

The proposed structure therefore follows a stackable approach inspired by existing sectoral practices and international references used by automotive manufacturers and training providers. The pathway is organised into four progressive stages:

1. Foundation level

Represents the baseline competencies already acquired by experienced automotive technicians working with internal combustion engine vehicles.

This level includes existing mechanical and electrical knowledge considered necessary to progress towards electric mobility-related functions.

2. Instructed Person in Electricity

This intermediate preparatory level was identified during the workshop as an important entry point for professionals transitioning towards high-voltage vehicle systems.

The level focuses primarily on electrical safety awareness and basic procedures related to work in electrically sensitive environments. Stakeholders highlighted that this stage could potentially be delivered through online learning formats, increasing accessibility and flexibility for working professionals.

The inclusion of this level was considered particularly relevant for:

- reducing barriers to participation,
- creating a gradual transition towards high-voltage competencies,
- and establishing a common safety baseline before practical high-voltage intervention training.

3. High-Voltage Technician (pilot micro-credential)

Represents the intermediate qualification level targeted by the pilot. At this stage, learners acquire competencies related to:

- safe intervention in high-voltage systems,
- diagnostics of electric and hybrid vehicles,
- and basic maintenance operations on BEV/HEV systems.

This level combines theoretical preparation with strong practical application and competence verification.

4. High-Voltage Specialist

Represents a future advanced level focused on specialised interventions, including:

- advanced diagnostics,
- battery-related operations,
- and more complex high-voltage system interventions.

This level was identified by stakeholders as a potential future development pathway for specialised technicians.

This modular structure was considered particularly important by stakeholders because it:

- supports continuous professional development,
- enables progressive specialisation,
- reduces barriers to entry into electric mobility-related training,
- and creates clearer learning and career progression pathways.

The stackable logic also increases the long-term scalability of the micro-credential model and opens future possibilities for articulation with broader qualification systems and recognition pathways.

13.3. Pilot Specification

The pilot focuses on the development of a micro-credential entitled “**High-Voltage Technician**”, targeting experienced automotive technicians currently employed in multi-brand workshops.

The pilot is positioned within a broader progressive learning pathway that includes a preparatory EIP (Instructed Person in Electricity) level and future advanced specialisation pathways.

The proposed micro-credential combines technical safety requirements, operational applicability, and labour-market relevance.

Element	High-Voltage Technician Micro-Credential
Target group	Experienced automotive technicians working in multi-brand workshops
Scope	Safety, diagnostics, and basic maintenance of BEV/HEV systems
Learning outcomes	Ability to safely handle HV systems, perform initial diagnostics, and execute basic maintenance tasks
Duration	Up to 40 hours
Pedagogy	Blended learning with a strong practical and workplace-oriented component
Assessment	Hybrid assessment model combining standardised practical assessment in a training environment with complementary company validation where applicable; assessment includes the possibility of failure
Quality Assurance	Accredited providers, harmonised assessment criteria, qualified HV trainers, and minimum equipment requirements
Recognition	Sectoral recognition linked to professional roles and digitally verifiable certification
Stakeholders	Training providers, companies, sectoral organisations, and qualification stakeholders
Support services	Not defined at this stage

The proposed assessment model reflects stakeholders’ concerns regarding the credibility, consistency, and labour-market relevance of competence verification.

Participants agreed that assessment should combine:

- a standardised practical assessment component conducted in a controlled training environment,
- with the possibility of complementary validation by employers in real workplace contexts whenever feasible.

This hybrid approach was considered important to ensure both reliability of assessment outcomes and alignment with operational realities in automotive workshops. Stakeholders also emphasised that the assessment process should maintain a sufficiently high level of rigor, including the possibility of failure where competencies are not adequately demonstrated.

Given the safety-critical nature of high-voltage interventions, participants additionally highlighted the potential relevance of periodic renewal or revalidation mechanisms to ensure continuous updating in line with evolving technologies, safety standards, and operational practices.

The proposed duration — limited to approximately one working week — was considered essential to ensure operational feasibility for companies and compatibility with the workload constraints typically faced by automotive workshops. This short-duration format was also regarded as a critical factor for reducing workforce downtime and enabling faster responses to technological change and emerging competence needs.

13.4. Pedagogical Approach

Stakeholders strongly emphasised that the pilot should prioritise practical learning approaches closely connected to workplace realities.

As a result, the proposed pedagogical model combines:

- preparatory theoretical components,
- practical hands-on activities,
- and applied learning scenarios linked to real workshop situations.

A blended learning approach was considered the most appropriate model, enabling flexibility for working professionals while preserving the practical dimension considered critical for competence acquisition in high-voltage vehicle systems.

The workshop discussions also highlighted the importance of:

- learning-by-doing methodologies,
- peer-to-peer exchange between technicians,
- and training environments equipped with appropriate tools and infrastructure.

Particular importance was placed on ensuring that learning activities focus not only on technical knowledge, but also on safe operational behaviour and problem-solving capabilities.

13.5. Assessment Approach

Assessment emerged as one of the most critical elements of the proposed micro-credential model.

Stakeholders consistently stressed that the value and credibility of micro-credentials depend heavily on the reliability and robustness of competence verification. As a result, the pilot adopts an assessment approach centred on practical demonstration of competencies rather than purely theoretical evaluation.

The proposed model combines:

- standardised practical assessment conducted in a training environment,
- clearly defined evaluation criteria,
- and complementary company-based validation where applicable.

The standardised assessment component aims to ensure consistency, transparency, and comparability across learners and training contexts. At the same time, stakeholder discussions highlighted the importance of preserving a strong connection with real workplace practices and operational requirements.

For this reason, the model foresees the possibility of involving companies in the validation process through:

- workplace demonstrations,
- participation in evaluation panels,
- or confirmation of competence application in operational settings.

Stakeholders also agreed that the assessment model should maintain a sufficiently high level of rigor, including the possibility of failure where competencies are not adequately demonstrated.

Particular importance was attributed to safety-related competencies associated with high-voltage systems. In this context, stakeholders identified the potential need for periodic renewal or revalidation mechanisms to ensure that certified professionals maintain updated competencies in line with evolving technologies, safety standards, and sectoral requirements.

This approach was considered especially relevant in the absence of nationally standardised qualification requirements for high-voltage automotive interventions, reinforcing the importance of trust and reliability in the proposed micro-credential model.

13.6. Quality Assurance and Recognition

Workshop discussions highlighted that quality assurance and recognition are fundamental conditions for the credibility, adoption, and long-term sustainability of micro-credentials within the automotive sector.

Stakeholders agreed that the proposed model should combine robust quality assurance mechanisms with sectoral recognition processes capable of ensuring labour-market trust, consistency, and professional relevance.

Quality Assurance Principles

Participants identified several core elements considered essential for ensuring the reliability and consistency of the pilot, including:

- delivery by accredited training providers,
- the use of standardised competence references,
- harmonised assessment criteria,
- minimum equipment and infrastructure requirements,
- and specific high-voltage (HV) training requirements for trainers.

Particular importance was attributed to ensuring that practical learning and assessment activities are conducted in environments equipped with appropriate tools, safety conditions, and technical resources aligned with sectoral requirements.

Stakeholders also stressed the importance of aligning learning outcomes, assessment approaches, and training conditions across providers in order to guarantee consistency and comparability of competencies.

Recognition and Sectoral Trust

The workshop discussions highlighted that sectoral recognition is critical for ensuring employer confidence and increasing the signalling value of certified competencies.

The proposed model therefore combines:

- practical assessment,
- digitally verifiable certification,
- and alignment with sectoral and international reference frameworks.

In the absence of nationally standardised qualification pathways for high-voltage automotive interventions, stakeholders considered alignment with internationally recognised industry practices — including frameworks inspired by German OEM qualification models — particularly important.

At this stage, stakeholders agreed that recognition should primarily be ensured at sectoral level through representative organisations and industry actors. The specific governance model and responsible recognition entities are currently under validation.

Stakeholders also identified the potential future importance of articulation with the Portuguese National Qualifications System, particularly through mechanisms related to recognition of prior learning and accumulation towards formal qualifications.

Given the safety-critical nature of high-voltage interventions, stakeholders additionally highlighted the potential need for periodic renewal or revalidation mechanisms to ensure that certified professionals maintain updated competencies in line with evolving technologies, safety standards, and sectoral requirements.

Digital Verification and Portability

Participants also identified digital verifiability and portability as important characteristics of the proposed micro-credential model.

The pilot is therefore expected to explore mechanisms such as:

- digitally verifiable certificates,
- digital badges,
- structured metadata associated with learning outcomes and assessment,
- and potential future integration with Europass or other digital credential ecosystems.

Stakeholders considered that digitally verifiable credentials could strengthen trust, facilitate competence signalling in the labour market, and support future accumulation or portability of learning achievements across organisations and qualification pathways.

13.7. Operationalisation of Assessment and Quality Assurance Mechanisms

The stakeholder discussions also explored the practical conditions required to operationalise the pilot micro-credential, particularly regarding assessment, quality assurance, trainer preparation, and access to technical resources.

The pilot implementation will be supported by ATEC, which will host the training and assessment activities within its existing technical training facilities. ATEC already delivers specialised electric mobility and high-voltage systems training for OEMs and industry partners, providing an established operational environment aligned with current sectoral requirements.

ATEC's facilities include dedicated workshop environments, technical infrastructure, and specialised equipment required for practical training and competence assessment in simulated working conditions. This includes access to electric vehicle systems, diagnostic tools, and high-voltage safety equipment necessary to support hands-on learning and assessment activities consistent with industry practices.

Regarding trainer capacity, ATEC currently has three trainers who have been trained and certified according to the requirements of the relevant German standard underpinning the proposed training approach. This existing expertise significantly strengthens the feasibility of the pilot and ensures the availability of qualified trainers with both technical and pedagogical competence in electric mobility systems and high-voltage safety procedures.

Stakeholders also highlighted the importance of maintaining close cooperation with sectoral and industry actors throughout the pilot implementation process in order to ensure labour-market relevance, alignment with technological developments, and long-term sustainability of the micro-credential.

From an assessment perspective, participants emphasised that competence validation should combine practical demonstrations, scenario-based exercises, safety compliance verification, and technical knowledge assessment carried out in controlled workshop environments. Quality assurance mechanisms should include transparent assessment criteria, alignment with recognised competence standards, involvement of external stakeholders in validation processes, and periodic review of training outcomes and employer feedback.

Finally, stakeholders stressed that the sustainability and future scalability of the pilot will depend on continued collaboration between training providers, sectoral organisations, and industry partners, particularly regarding the continuous updating of technical content, trainer qualification, and access to emerging technologies within the automotive sector.

13.8. Stakeholders and Governance

The pilot is based on a collaborative governance approach involving multiple stakeholders from the automotive ecosystem.

Training providers are expected to lead the pedagogical design and operational implementation of the pilot, while companies contribute through:

- co-design of content,
- validation of labour-market relevance,
- and potential participation in assessment activities.

Sectoral organisations are expected to play a strategic role in strengthening trust, standardisation, and recognition mechanisms, while public employment and qualification stakeholders may contribute to future scalability, dissemination, and articulation with broader qualification frameworks.

This governance approach reflects the strong consensus emerging from the workshop that micro-credentials should not be designed solely by training institutions, but rather through continuous collaboration with industry actors.

Company Involvement

Stakeholders highlighted that company involvement may occur at different levels depending on organisational capacity, operational constraints, and strategic interest in the pilot.

Potential forms of company involvement identified during the workshop include:

- strategic validation of the pilot model,
- contribution to the definition of competence requirements and learning outcomes,
- provision of equipment or technical resources,
- participation in assessment panels or competence validation activities,
- hosting of practical learning activities,
- and internal recognition of the micro-credential within recruitment or professional progression processes.

Participants considered that this flexible approach to engagement could facilitate broader participation from both OEMs and SMEs while preserving strong labour-market alignment.

Type of Stakeholder Involvement	Possible Contribution
Strategic validation	Feedback on pilot design and relevance
Competence definition	Identification of required skills and learning outcomes
Equipment and infrastructure	Access to vehicles, tools, or technical resources
Assessment participation	Participation in juries or workplace validation
Work-based learning	Hosting practical activities or demonstrations
Recognition	Internal recognition in HR and progression processes

Monitoring and Continuous Improvement

Stakeholders highlighted that the governance model should incorporate mechanisms for continuous monitoring and improvement in order to ensure the long-term relevance, responsiveness, and sustainability of the pilot.

Particular importance was attributed to:

- periodic updating of learning contents in response to technological evolution,
- monitoring and auditing of pilot implementation,
- systematic collection of feedback from companies and learners,
- and the definition of impact indicators related to employability, competence acquisition, operational applicability, and employer satisfaction.

Participants also stressed that continuous stakeholder involvement — particularly from companies and sectoral actors — is essential to ensure that the micro-credential model remains aligned with evolving labour-market needs, technological developments, and operational realities in the automotive sector.

13.9. Financial Sustainability

Stakeholders agreed that financial sustainability is a critical factor for the long-term viability of micro-credentials in the automotive sector.

The current model is primarily based on employer-funded training, reflecting the direct operational value that companies expect from rapid and targeted upskilling initiatives.

At the same time, stakeholders identified the importance of exploring complementary public funding mechanisms capable of supporting wider adoption, particularly for SMEs and workers facing financial barriers to participation.

Potential mechanisms mentioned during the discussions include:

- Portugal 2030 programmes,
- training vouchers,
- and other public incentives for upskilling and reskilling.

The sustainability of the model is also strongly linked to the perceived value and recognition of the micro-credential. Stakeholders indicated that companies are more willing to invest when training leads to:

- verified competencies,
- recognised standards,
- and measurable operational benefits.

List of Annexes

Agenda and presentation used in the Focus Group and Co-Creation session

Attendance list

Personna Canva – template

Personna Canva - guidelines

Value Proposition Canva – template

Value Proposition Canva - guidelines



MC's value proposition

Value proposition of the Department of
Education of the Government of Navarre

D4.2 MC's value proposition

Deliverable information

Report Title:	MC's value proposition - Value proposition of the Department of Education of the Government of Navarre		
Responsible Project Partner:	Gob. Navarra	Contributing Project Partners:	Gobierno de Navarra

Document data:	File name:	AutoCredify - WP4 Mc's value propotion Gobierno de Navarra		
	Pages:	19	No. of annexes:	2
	Status:	final	Diss. Level:	CO
Project title:	Accelerating automotive green and digital skills with micro-credentials		GA No.:	ERASMUS-EDU-2024-POL-EXP-MICRO-CRED
Project No.:	101196000		Output No:	D4.2
Date:	Due Date:	31.3.2026	Submission date:	26.05.2026
Keywords:	Micro-credentials (MCs), automotive maintenance, skills needs, MC governance, pedagogical design			
Review by:	Maria Laura Fornaci Hanne Shapiro Liga Baltina		Review date:	May 2026
Approved by:	Liga Baltina		Approval date:	May 2026

For more information visit project's [website](#).

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Lists of abbreviations

ABBR	...	Description
ANTRV	Asociación Navarra de Talleres de Reparación de Vehículos	The Navarre Association of Vehicle Repair Workshops (ANTRV) is a non-profit organization that brings together workshops and dealerships. Its mission is to represent, defend, promote, and improve the interests of its members.
SNE	Servicio Navarro de Empleo	The Navarre Employment Service-Nafar Lanzare (SNE-NL) is the autonomous body of the Government of Navarre responsible for active employment policies in the Foral Community.
CIP	Centro Integrado Politécnico	An Integrated Polytechnic Center (CIP) is a type of public educational center in Navarre specializing exclusively in Vocational Education and Training (VET). They are characterized by offering all FP training options in a unified manner and in a single location, acting as benchmarks for innovation and connection with the world of work.
SME	Small and Medium Enterprise	A Small and Medium Enterprise (SME) is a company that, due to the volume of its income and the size of its workforce, falls below the limits of large corporations.
VET	Vocational Education Training	Vocational Education and Training (VET) is a theoretical-practical educational model specifically designed to prepare people for the job market. VET focuses on students acquiring the professional skills and technical abilities that companies need immediately.
MC	Micro-credential	A microcredential is an official, digital certification that verifies that a person has acquired a very specific competence or skill through short-term training.
OHS	Occupational Health and Safety	It is the set of measures and activities carried out in a company to detect, prevent, and control workplace accidents and occupational diseases. Its main objective is to protect the health and safety of workers.
BOE	Boletín Oficial del Estado	Document through which the central government and the various public administrations officially

		publish all the laws, regulations, decrees, calls for proposals and administrative acts of the country.
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14.



Executive summary

The Government of Navarra has actively contributed to the development of the project through a strong regional collaboration ecosystem involving public institutions, vocational education centres, industry representatives and companies from the automotive sector. The activities carried out in Navarra have been supported by the Navarra Association of Vehicle Repair Workshops (ANTRV), the Navarra Employment Service, and the Planning and Organisation Service of the Department of Education of the Government of Navarra.

The project has also involved the direct participation of three major vocational education and training centres in Navarra — CIP Virgen del Camino, CIP Huarte and CIP Donapea — together with more than 300 collaborating companies from across the region's automotive sector.

Through stakeholder workshops, surveys and expert profiling activities, several critical friction points were identified within the transition towards hybrid and electric vehicle technologies. These include the lack of certifiable and standardised training pathways, the rapid evolution of the automotive sector compared to the speed at which training programmes are updated, and the difficulties faced by workshops in adapting to new technologies. These challenges are particularly significant for small and medium-sized enterprises, which represent the majority of workshops in the region. Additionally, the project identified a high level of technological hermeticism from vehicle manufacturers in the field of hybrid and electric vehicles, limiting access to specialised technical knowledge and training resources.

The resulting value proposition focuses on standardisation and certification. Employers expressed a clear willingness to invest in workforce upskilling, provided that the training guarantees a verified, uniform and recognised level of competence.

As a result of the activities carried out during WP4, a set of key competencies and priority training areas for future microcredentials was identified. The work developed has successfully transformed the project from a conceptual framework into an industry-supported model with strong stakeholder engagement. This has established a solid foundation for the upcoming technical development phase in WP5 and the practical implementation and testing activities planned for WP6.

15.

1 Introduction

Within the framework of Work Package 4 (WP4), the Government of Navarra focused on analysing the real training and upskilling needs emerging from the transformation of the automotive maintenance and repair sector, particularly those linked to hybrid and electric vehicle technologies. The work carried out in Navarra aimed to ensure that future micro-credentials (MCs) respond directly to the challenges currently faced by companies, vocational education providers and workers in the sector, while remaining aligned with the European approach to lifelong learning and employability established by the European Council Recommendation on micro-credentials (2022).

The regional strategy developed in Navarra was strongly based on collaboration between education, employment and industry stakeholders. The project brought together the Navarra Association of Vehicle Repair Workshops (ANTRV), the Navarra Employment Service, and the Planning and Organisation Service of the Department of Education of the Government of Navarra, creating a multidisciplinary ecosystem to support the design and validation of future training solutions.

A key component of the work developed during WP4 was the direct involvement of the regional vocational education network and the automotive industry itself. Three VET centres — CIP Virgen del Camino, CIP Huarte and CIP Donapea — actively participated in the process alongside more than 300 collaborating companies from Navarra. Through workshops, surveys and stakeholder consultations involving teachers, students, former students and companies, the project gathered valuable information regarding current competence gaps, future training demands and barriers affecting workforce adaptation to technological change.

The results obtained highlighted several structural challenges affecting the sector. Stakeholders identified a lack of standardised and certifiable specialised training, difficulties in adapting educational content to the rapid pace of technological evolution, and the limited capacity of many small and medium-sized workshops to integrate new hybrid and electric vehicle technologies into their daily activity. In addition, concerns were raised regarding the restricted access to technical information and specialised knowledge controlled by vehicle manufacturers.

The activities carried out during WP4 also confirmed the strong interest of companies and sector representatives in reliable and recognised upskilling pathways capable of guaranteeing homogeneous competence levels across the workforce. This reinforced the importance of developing micro-credentials based on practical relevance, transparency and industry recognition.

As a result of the collaborative work developed in Navarra, a first set of priority competencies and training areas was identified to support the future design of micro-credentials focused on hybrid and electric vehicle maintenance. The outcomes of WP4 provide a solid basis for the technical development activities foreseen in WP5 and for the future pilot implementation and validation phases planned in WP6.

2 Conceptual Framework

In Navarra, the conceptual framework for the development of micro-credentials was designed through a participatory approach that brought together key actors from the regional automotive ecosystem, including public

authorities, vocational education centres, industry representatives and companies from the maintenance and repair sector. The purpose of this work was to better understand the emerging competence needs linked to the transition towards hybrid and electric mobility and to define the foundations for future specialised training solutions.

The activities developed by the Government of Navarra followed the principles established in the European Council Recommendation (2022) on micro-credentials for lifelong learning and employability, with the intention of creating training models that are adaptable, recognised and closely connected to labour market demands. The approach adopted focused on ensuring that future micro-credentials can respond efficiently to the fast pace of technological change currently affecting the automotive sector.

Information gathered through workshops, stakeholder meetings and surveys involving companies, teachers, students and former students made it possible to identify several common priorities and challenges. Participants consistently highlighted the necessity of shorter and more specialised training opportunities that can be updated quickly and provide reliable certification of professional competences, particularly in the field of hybrid and electric vehicle technologies.

The consultation process carried out during WP4 demonstrated that future micro-credentials should be based on several key principles:

- Transparent and measurable learning outcomes.
- Training content strongly connected to real workplace needs.
- Competence standards recognised across the sector.
- Flexible learning opportunities adapted to workers and SMEs.
- Potential integration within broader lifelong learning and accreditation systems.

Based on all of this, the following definition for a microcredential focused on hybrid and electric vehicles was obtained:

A microcredential is a certification awarded to individuals after completing a short course or training program. It demonstrates the acquisition of highly specific, measurable knowledge and skills that address the current needs of businesses and workers.

Microcredentials offer the advantage of standardization, meaning they are equivalent and valid across different regions and countries. They are valuable on their own but also cumulative: they can be combined to achieve higher qualifications or accreditations within continuing education.

Furthermore, their quality is not only ensured by national and international regulations, but companies themselves actively participate in their creation, guaranteeing that the learning is useful and recognized within the relevant professional sector.

3 The Value Proposition Approach

Premised on the assumption that the value proposition focuses on different paths, on the one hand the adapted definition of what a micro credential is and on the other hand the global design taking into account multiple dimensions of the micro credential itself.

The value proposition developed in Navarra was based on a participatory and evidence-based approach involving the main stakeholders connected to the regional automotive maintenance and repair sector. The objective of this process was to identify the real training needs associated with the transition towards hybrid and electric vehicle technologies and to define a micro-credential model capable of responding to the operational reality of the sector, particularly within small and medium-sized enterprises (SMEs), which represent the majority of the automotive business network in Navarra.

Particular relevance was given to the situation of small and medium-sized workshops, which form the majority of the regional automotive business network. Many stakeholders identified difficulties in accessing specialised training and adapting to the increasing technological complexity of electrified vehicles. In addition, concerns were raised about limited access to technical information and manufacturer-specific knowledge required for advanced maintenance and repair operations.

Another important outcome of the stakeholder engagement activities was the recognition of the need for stronger cooperation between education providers, public institutions and the automotive industry. Participants stressed that closer collaboration is essential to ensure that training provision evolves at the same pace as technological innovation and labour market demands.

The work carried out in Navarra during WP4 has therefore provided a first competence-based framework for the future design of micro-credentials related to hybrid and electric vehicle maintenance. The conclusions and priorities identified will support the next stages of the project, particularly the technical development activities planned in WP5 and the future testing and validation activities foreseen in WP6.

The process began with a large-scale consultation with the project's main target groups. Approximately 400 companies, 200 teachers, 300 students, and 300 alumni participated in an initial survey phase. Participants were introduced to the project's objectives, context, and accreditation system, and were subsequently invited to provide their feedback on various aspects related to the future implementation of the micro-credentials. The survey addressed key issues such as preferred training content, training duration, delivery formats, flexibility needs, and career expectations related to hybrid and electric vehicle technologies. This first phase also served to assess stakeholder interest in participating in subsequent in-person co-creation activities.

Following the consultation phase, a stakeholder event was organised at CIP Virgen del Camino. The event combined information sharing, collaborative discussion and co-design activities. During the first part of the event, participants attended presentations introducing the project framework, the outcomes of WP2 and the main results obtained from the surveys carried out among the different stakeholder groups. This was followed by a guided visit to the training facilities and technical resources available at the centre.

The second part of the event focused on roundtable discussions and co-design workshops involving representatives from companies, the Navarra Association of Vehicle Repair Workshops (ANTRV), the Navarra Employment Service (SNE), the Professional Accreditation Section, the Vocational Education Projects and Internationalisation Section, and teachers from the participating VET centres. The active involvement of ANTRV and SNE was particularly relevant, as both organisations provided direct insight into the current needs of the automotive sector and the challenges faced by workers and companies in relation to hybrid and electric vehicle training.

The stakeholder consultation process identified two major groups of challenges affecting the implementation of specialised training in the sector. The first group was related to the technological context itself, including the rapid

pace of technological evolution and the limited access to technical information due to the hermetic nature of vehicle manufacturers. The second group concerned workforce-related barriers, such as the lack of specialised training opportunities, limited availability of workers to attend long training programmes and difficulties for SMEs in adapting to new technological requirements.

Based on the information gathered during the consultation and co-design activities, stakeholders highlighted several expected benefits associated with the future implementation of micro-credentials. Participants valued the possibility of accessing short, flexible and highly specialised training programmes capable of responding quickly to technological changes within the automotive sector. The certifiable nature of the training was also identified as a key factor for increasing both company engagement and learner motivation.

As a result of the collaborative process, the Government of Navarra, through the Department of Education, identified the primary target profile for the future micro-credential as active professionals between 25 and 50 years old, already holding vocational education qualifications and showing a strong interest in professional upskilling and reskilling. The proposed training model consists of a semi-presential micro-credential lasting between 15 and 30 hours, designed to allow rapid specialisation while minimising the operational impact on mobility service centres and repair workshops.

The co-design activities also enabled the identification of several priority competence areas that should be addressed in future micro-credentials related to hybrid and electric vehicles. These include safety and disconnection procedures, battery systems and energy storage, and charging infrastructure technologies.

One of the defining characteristics of the Navarra approach was its strong connection with the operational reality of SMEs and local repair workshops. Unlike more industrially concentrated ecosystems, the automotive sector in Navarra is predominantly composed of small and medium-sized repair businesses. Consequently, stakeholders emphasised the importance of designing practical, flexible and directly applicable training solutions capable of supporting the technological adaptation of companies while remaining compatible with their operational limitations.

4 Stakeholder engagement

Stakeholder engagement activities carried out in Navarra focused on establishing direct collaboration between the regional automotive sector, vocational education and training providers, public institutions and organisations connected to employment and professional accreditation systems. The objective of this engagement process was to ensure that the future development of micro-credentials responds to the real operational, technological and training needs of the automotive maintenance and repair ecosystem in Navarra.

Unlike other approaches mainly based on sector-wide events or institutional dissemination activities, the Navarra strategy concentrated on building close and practical cooperation with the key organisations directly connected to the regional automotive sector. In this context, the role of the Navarra Association of Vehicle Repair Workshops (ANTRV), the Navarra Employment Service (SNE) and the Professional Accreditation Section was particularly relevant, as these entities provided continuous feedback based on their direct knowledge of companies, workers, training needs and qualification systems.

The stakeholder engagement process started with a broad consultation phase involving the main target groups identified within the project. Information about the project and its objectives was disseminated through direct

communication with vocational education centres across the region, collaborating centres participating in the project, sector associations and more than 400 automotive companies. Additional dissemination activities were carried out through the project website and institutional communication channels.

As part of this initial engagement phase, surveys were distributed to approximately 400 companies, 200 teachers, 300 students and 300 former students. The purpose of the consultation was not only to introduce the project and raise awareness about micro-credentials, but also to gather detailed information regarding training needs, preferred training formats, expected duration, competence priorities and barriers affecting participation in specialised training related to hybrid and electric vehicles.

The main stakeholder event was organised by the Department of Education of the Government of Navarra at CIP Virgen del Camino as a hybrid event lasting six and a half hours. A total of 17 participants attended the session, representing companies, workshop managers, vocational education providers, public administration bodies and sector organisations. The Department of Education acted as the coordinator and facilitator of the entire process, creating a direct connection between all stakeholder groups involved in the project.

The event was structured into two complementary phases. During the first phase, participants attended presentations introducing the project context, the outcomes of WP2 and the results obtained from the previous consultation activities. The second phase focused on collaborative work through roundtable discussions and co-design workshops. Four working groups were created, each composed of representatives from the different stakeholder categories, including the Professional Accreditation Section, public administration, ANTRV, SNE, SMEs and teachers from participating VET centres.



Figure 1: Cover of the tool used for the co-design session

The active participation of ANTRV provided valuable insight into the daily operational reality of automotive workshops and the concerns of companies facing the transition towards hybrid and electric vehicle technologies. Similarly, the Navarra Employment Service contributed with expertise related to labour market demands, workforce qualification needs and employability challenges within the sector. The Professional Accreditation Section also played a key role by providing guidance regarding certification systems, curriculum development and official recognition mechanisms connected to vocational education and professional qualifications.

The stakeholder engagement activities highlighted several common priorities across the different groups involved in the process. Participants emphasised the importance of flexible and practical training solutions, the need for officially recognisable and certifiable training, concerns regarding the rapid evolution of automotive technologies and the necessity of creating short and specialised learning opportunities compatible with the operational limitations of SMEs and repair workshops.

One of the defining characteristics of the Navarra engagement model was the strong collaboration established between the education system, employment services, accreditation authorities and the automotive sector itself. This close cooperation ensured that the future development of micro-credentials remains strongly connected to the real needs of companies and workers while also considering employability, certification and long-term integration within vocational education and lifelong learning systems.

5 The Value proposition & Pilot Design

Throughout this section, the value proposition will be broken down into subsections, referencing the creation of the microcredential pilot, which will be explicitly developed in WP5.

For both, as explained previously, a preliminary survey of all stakeholders initially identified by the project was conducted, followed by a co-design session held in person, in which all the aspects detailed below were discussed.

The survey results are considered vital for broadening the range of stakeholders involved in the conversation. Many indicated their inability to participate in an in-person session, which was a major obstacle to their involvement in the project. We, from the Department of Education of the Government of Navarra, believe that the results obtained after consulting the students and former students of the training courses currently offered in the territory of the automotive professional family, are very interesting and relevant because most of them are potential users of the micro-credentials that will be established.

5.1 Analysis of Competence Gaps and Target Group

Previously to the planned in-person co-design session, a preliminary survey was conducted with all stakeholders to help frame and guide the workshop. The results, when analyzed, made it much easier to identify the main issues for discussion and to distinguish between the survey responses and the data of greater and lesser relevance to the project.

To this end, the co-design session was divided into two parts: one focused on defining the target audience for the micro-credential, and the other on the content, technical skills, and soft skills that should be incorporated into the specific training design.

The following couple of figures (figure 2 and 3) are part of the tool used to collect the different concerns, opinions, doubts, and obstacles expressed by the various stakeholder groups in the focus groups and the co-design session.

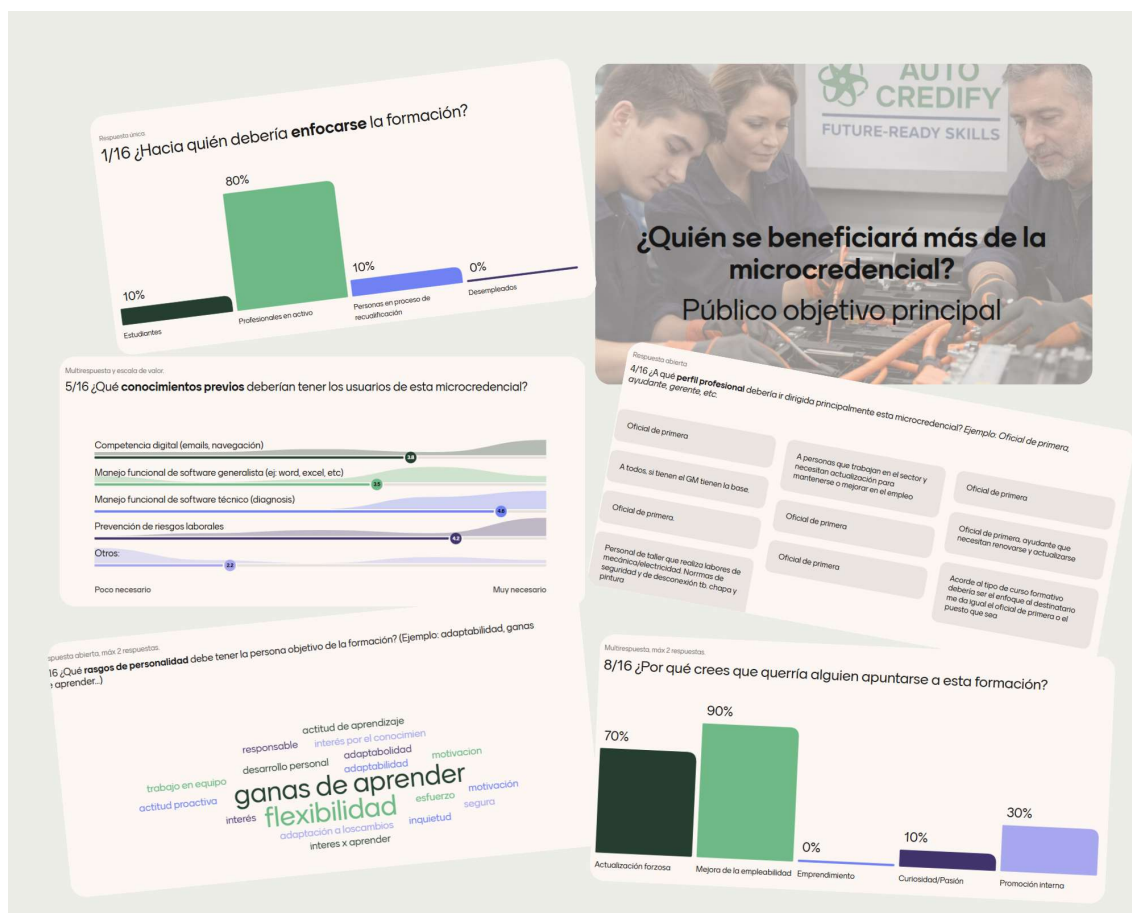


Figure 2. Example of results obtained in the co-design workshop regarding the target person.



Figure 3. Example of results obtained in the co-design workshop regarding the configuration of the micro-credential.

5.2 The Value Statement

The value proposition, which is developed after analyzing and sharing the results of the initial survey through the co-design workshop, consists of two distinct parts.

On the one hand, the target audience for the micro-credential is defined, and on the other, the more technical (content/skills) and pedagogical aspects (duration, format, etc.) are addressed.

It is clear that everything related to the project needs to be framed within the current state of training in the region, as well as within the automotive sector (as part of a widespread industry in the region with a large proportion of small businesses).

15.1.1. 5.2.1 Detailed characterization of the target group

Accurately identifying the target audience is essential for reducing the skills gap in current mobility service centers. A training program that ignores the specific needs of working technicians is bound to produce ineffective training that will fail to address the operational challenges of today's workshops.

Training in VHE/VE requires a solid technical foundation. After converting the Likert scales (a psychometric measurement instrument used in surveys to assess attitudes, opinions, and perceptions by asking respondents to rate their level of agreement or disagreement with a statement) from field studies, the following prior knowledge priorities for accessing microcredentials are identified and ordered:

Technical software handling (Diagnosis)
Automotive electricity
Occupational Health and Safety (OHS)
Digital competence and generalist software

Based on the research context, the profile is segmented under the following strategic parameters:

- Main priority: Working professionals, whose motivation ranges from "forced updating" due to market pressure to seeking a substantial improvement in their employability.
- Educational level: Mostly graduates of Higher or Intermediate Vocational Training programs. Consideration should also be given to staff who, without an official qualification, have been able to demonstrate their knowledge through a skills accreditation process.
- Age and experience: Strategic focus on the 25 to 50 age range, covering both young profiles in the specialization phase and experienced technicians in recycling processes.
- Personality Traits: High adaptability, flexibility, and a proactive attitude towards continuous learning are required.
- Change Management: It is imperative to mention the existence of a minority segment (mainly in CFGM) that shows resistance to electrification ("loyal to combustion"). The training rollout must include change management strategies to mitigate this cultural barrier.

The students' perception—that they feel "lost" in the face of new technologies—confirms that traditional formal training is insufficient for safely working on electric vehicles. This lack of confidence not only compromises productivity but also generates legal and physical safety risks that only focused specialization can mitigate.

15.1.2. 5.2.2 Definition of the training typology and representative characteristics

In technical fields, the teaching methodology and course load are crucial to ensuring knowledge transfer to the workplace. The balance should favor immediate practical application.

When evaluating program format and duration the data reveals a dichotomy between the need for technical depth and the availability of time:

- Blended learning. Online theory and intensive in-person practical sessions. It is the ideal model for work-life balance.
- 100% In-person. Highly demanded by small repair centers and students of Intermediate Vocational Training who prioritize physical contact with the vehicle.

Although the most demanded option is 15 to 30 hours, there is a latent demand for up to 60 hours for complex topics.

Therefore, it is proposed to implement a modular, cumulative model of micro-credentials, where blocks of 20 hours can be added together to reach advanced levels of specialization without overloading the worker's schedule.

This same logic applies to the structure of the priority content, where the strategic weighting of the curriculum ensures that instructional time is allocated to the areas with the greatest impact on operator safety and service efficiency:

- Safety and Disconnection Module: The essential core. High voltage allows no margin for error; this module guarantees the technician's physical safety.
- Storage and Batteries: Specialization in cell management and lifespan.
- Propulsion Systems and Infrastructure: Understanding the traction and charging ecosystem.
- Comfort and Auxiliary Systems: Management of secondary systems adapted to the electric vehicle. High-Value and Emerging Modules To enhance the value proposition, the curriculum integrates critical elements of the current market:
- Advanced Safety: Specifically includes thermal management and fire suppression, vital for handling lithium-ion battery incidents.
- Sustainability: Waste management, addressing the environmental sensitivity of chemical component handling.

All of this results in perceived benefits and return on investment as:

- Better job opportunities: The micro-credential acts as a career accelerator.
- Greater job efficiency: Reduced diagnostic and problem-solving times.
- Performance confidence: Decreased technical uncertainty and improved professional self-confidence. The convergence of these metrics paints a definitive picture of the project's strategic necessity.

The lack of time and limited employee availability are the main obstacles. The micro-credential acts as the optimal solution, offering an agile and certifiable structure that minimizes lost revenue for the workshop.

To respond to the rapid changes in the market, training adopts a micro-learning structure, allowing for quick content updates without restructuring the entire program. Logistical efficiency only makes sense if the technical content accurately addresses the risks and complexities of modern automotive systems.

5.3 Strategic Approaches for the MC's

We then divide this strategic approach into the five dimensions of microcredentials: governance, pedagogy, assessment, quality assurance, and financial sustainability.

5.3.1 Governance

The importance of the participation of vocational training centers is undeniable. These centers serve as hubs for training, information, networking, and a significant portion of the potential student body for micro-credentials, and they also possess the necessary infrastructure, materials, and trained instructors. Furthermore, the services within the Department of Education capable of developing officially certifiable training programs are crucial.

It is important to note that in Spain, although the management of education has been transferred to the autonomous communities, all qualifications awarded within the country are initially established by the central government and subsequently implemented in each region.

Therefore, it is essential that this process originate from the Ministry of Education.

5.3.2 Pedagogy

A hybrid training format (in-person and online) is proposed to facilitate work-life balance for participating students, as many may be currently employed. The content and skills to be taught can be divided between the two models based on pedagogical and material criteria.

Furthermore, adequately updated facilities with close ties to the business community are required. The willingness of the various brands that have developed (and continue to develop and patent) the current technologies to share information will be crucial. We identify this as a major obstacle to overcome.

5.3.3 Assessment

As mentioned in the previous section, since this is the first stage of regulatory management by the Ministry of Education, any entity accredited to certify training must be accredited by the Ministry or any other competent body.

Once the certification process is developed at the national level, the different regions can implement and configure it within the limits allowed by the regulations.

5.3.4 Quality Assurance

The possibility of creating a joint committee comprised of business associations from the sector and the Department of Education is being considered to determine whether the training to be offered (and subsequently, what is currently being offered) meets both the sector's needs and the quality standards required for certifiable training.

In any case, the quality standards established by the Department of Education of the Government of Navarre for all certifiable training must be followed.

A balance must be struck between technical depth and immediate practical applicability, ensuring that the training is not ineffective or fails to address the real operational challenges of current workshops.

5.3.5 Financial Sustainability

Companies in the sector have expressed their willingness to finance training in a manner similar to their current practices.

If the possibility of introducing micro-credentials within the regulatory framework of Professional Competencies is considered (specifically, starting with the Level A qualifications already established by the new national legislation: Organic Law 3/2022, of March 31, on the organization and integration of Vocational Training), it would be integrated into the existing training offerings. This training could therefore be funded by the corresponding public body.

However, the training offered by the National Employment Service (SNE) as non-formal training cannot be overlooked (in many cases allowing for subsequent accreditation of skills through employment, which is accompanied by the worker's complete training history (formal and non-formal)).

6 Conclusions

The work carried out within the framework of WP4 in Navarre confirms that the AutoCredify project has successfully evolved from a purely conceptual framework to a robust micro-credential model, supported by industry and with a high level of commitment from key stakeholders.

The creation of a regional collaboration ecosystem—integrating the Department of Education, the Navarre Employment Service (SNE), the Navarre Association of Workshops (ANTRV), and leading vocational training centers such as CIP Virgen del Camino, Huarte, and Donapea—has been crucial in accurately identifying skills gaps in the transition to hybrid and electric vehicles.

It is concluded that the value proposition should prioritize flexible, short-term (15-30 hours) blended learning training, specifically designed for working professionals between 25 and 50 years old, in order to facilitate technical updates without compromising the operational viability of SMEs in the sector.

The proposed "Modular Micro-stacking" model will allow for scalable specialization in critical areas such as high-voltage safety. Advanced diagnostics and battery management ensure a rapid response to the market's pace of innovation.

Finally, the implementation of a joint governance committee and strict adherence to the quality standards of the Government of Navarre and Organic Law 3/2022 guarantee that these micro-credentials are certifiable, transparent, and officially recognized solutions, thus establishing a solid foundation for technical development and pilot implementation in the final phases of the project.

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ANNEXES

ANNEX 1. Pre-surveys for stakeholders: Companies

Pre-survey online for companies.

Autocredify is an initiative that addresses the changing skill requirements in the repair and maintenance sector of hybrid and electric vehicles through innovative micro-credential systems. To carry out this project, we need to know a series of aspects from your side in order to conduct a study aligned with the reality of companies.

* Indicates that the question is mandatory

Company Information

Please fill in the following information regarding your company.

1. Company name *
2. Company Tax ID (CIF) *
3. Company address *
4. Postal code *
5. City/Town *
6. Phone number *

-
7. Main activity of the company *

Select one option.

- ☐ Repair and maintenance workshop
- ☐ Dealership/Vehicle sales
- ☐ Component manufacturing/distribution
- ☐ Auxiliary services (insurance, appraisal, etc.)
- ☐ Other:

8. If you selected "Other," please specify the main activity of your company below.

Official Qualifications

9. Do you know the National Catalogue of Professional Competence Standards? *

- ☐ Yes
- ☐ No

☐ I've heard of it, but I don't know it well

10. Did you know that Official Qualifications can be obtained through training or through accreditation of work experience? *

☐ Yes → Skip to question 11

☐ No → Skip to question 13

11. Training: Would you like workers to have access to training in... (Select one or more)

☐ Grade A: 5 to 160 hours

☐ Grade B: 30 to 430 hours

☐ Grade C: 220 to 1190 hours

☐ Grade D: generally 2000 hours

☐ Grade E: generally between 300 and 900 hours

☐ No, I'm not interested

12. Accreditations: Are you interested in workers being able to officially certify their work experience? (Select one or more)

☐ Grade A: 5 to 160 hours

☐ Grade B: 30 to 430 hours

☐ Grade C: 220 to 1190 hours

☐ No, I'm not interested

I don't know the system

13. Would you be interested in receiving information about it? *

☐ Yes

☐ No

14. What type of certification system would you like to receive information about?

☐ Training

☐ Accreditation of work experience

☐ Training and accreditation of work experience

Training in the Automotive Sector

15. Does your company already work with or plan to work with Hybrid/Electric Vehicles? *

- ☐ Yes, we already work with them
- ☐ We are in the process of starting
- ☐ We have short-term plans
- ☐ No, not at the moment

16. Do you think workers need short training courses to expand their knowledge and stay updated? *

- ☐ Yes
- ☐ No

17. From the following list, which topics do you consider MOST URGENT for short training in HEV/EV? (Select all that apply)

- ☐ High-voltage (HV) safety and protocols
- ☐ Battery diagnostics and management systems (BMS)
- ☐ Preventive and corrective maintenance of electric motors
- ☐ Power electronics diagnostics (inverters, converters)
- ☐ Charging infrastructure and connector standards
- ☐ Bodywork repair in electric vehicles (due to structure and batteries)
- ☐ ADAS systems (identification, calibration, repair, safety, etc.)

18. What do you consider the ideal format for a short HEV/EV training course? *

- ☐ 100% in-person (Practice-focused)
- ☐ Blended (Online theory, in-person practice)
- ☐ 100% online (Only if theory is sufficient)

19. Regarding duration, what is the ideal number of hours for a short HEV/EV training that provides real value?

- ☐ Less than 15 hours
- ☐ 15–30 hours
- ☐ 30–60 hours
- ☐ More than 60 hours (Would no longer be “short”)

Micro-credentials

Micro-credentials (Grade A) are short training modules that, when accumulated, can lead to a full qualification (Grade B and/or C).

20m Were you aware of the existence of micro-credentials? *

- ☐ Yes → Skip to question 21
- ☐ Yes, but I don't know anything about them → Skip to question 24
- ☐ No → Skip to question 24

I know about micro-credentials

21. Would you use them so that your workers can certify their knowledge? *

- ☐ Yes
- ☐ No

22. Why? *

23. Knowing that a micro-credential is short-duration training, do you think it is useful as a complement to the formal or informal training workers already receive? *

- ☐ Yes, if it results in official certification
- ☐ Yes, even without official certification
- ☐ No, it's too little time to specialize a worker
- ☐ No, we prefer the training currently being offered

I don't know about micro-credentials

24. Would you be interested in receiving information about them? *

- ☐ Yes
- ☐ No

Sector Needs

25. The motivation level of the students your company receives is... *

- ☐ Very good overall
- ☐ Good, although they generally lack personal and/or professional maturity
- ☐ Not very good; in addition to maturity, they lack commitment, initiative, and teamwork
- ☐ Other:

26. The motivation level of your company's workers is...

- ☐ Very good overall

- ☐ Good, although they generally lack personal and professional maturity
- ☐ Not very good; in addition to maturity, they lack commitment, initiative, and teamwork
- ☐ Other:

27. What other training do you consider important for your workers? *

28. In general, what level of language proficiency do you consider essential for your workers? *

- ☐ None
- ☐ Basic
- ☐ Intermediate
- ☐ Advanced

29. What other knowledge do you consider important for your workers?

30. What other competencies do you consider important for your workers?

31. What do you prioritize when hiring workers? *

- ☐ Technical skills
- ☐ Technical knowledge
- ☐ Soft skills (teamwork, punctuality, customer service, etc.)
- ☐ Digital skills (use and knowledge of technologies)

32. Other suggestions:

The Future of the Automotive Sector

33. Regarding the motivation level of your workers, in the last 10 years it has... *

- ☐ Improved
- ☐ Worsened
- ☐ Stayed the same

34. Which technology do you think will dominate the market? *

- ☐ HEV
- ☐ Plug-in EV
- ☐ Non-plug-in EV
- ☐ Hydrogen
- ☐ LPG
- ☐ CNG

- ☐ Biofuels
- ☐ Synthetic e-fuels
- ☐ Other:

35. What do you think the future of small automotive workshops will be? *

ANNEX 2. Pre-surveys for stakeholders: Students.

Pre-survey online for students.

Autocredify is an initiative that addresses the changing skill requirements in the repair and maintenance sector for hybrid and electric vehicles through innovative micro-credential systems. To carry out this project, we need to know a series of aspects from you in order to conduct a study aligned with the reality of companies.

* Indicates a required question

1. First Name *

2. Last Name 1 *

3. Last Name 2 *

4. Contact Email *

5. Phone Number *

6. Training Program *

Select one option.

- ☐ CFGB Vehicle Maintenance
- ☐ CFGM Automotive Electromechanics
- ☐ CFGM Bodywork and Painting
- ☐ CFGM Machinery Electromechanics
- ☐ CFGS Electromechanical Maintenance of Motor Vehicles

7. What motivated you to choose this training program? *

Official Qualifications

8. Do you know about the National Catalogue of Professional Competence Standards? *

Select one option.

- ☐ Yes
 - ☐ No
 - ☐ I've heard of it, but I don't really know what it is.
-

9. Did you know that official qualifications can be obtained either through training or through accreditation of work experience? *

Select one option.

- ☐ Yes → Skip to question 10
 - ☐ No → Skip to question 12
-

I know the system

10. Training: Based on the number of hours, which of these types of training would you be willing to take once you finish your current program? (Select one or several) *

Select all that apply.

- ☐ Grade A: 5 to 160 hours
- ☐ Grade B: 30 to 430 hours
- ☐ Grade C: 220 to 1190 hours
- ☐ Grade D: generally 2000 hours
- ☐ Grade E: generally between 300 and 900 hours
- ☐ None

11. Accreditations: If you had previous work experience, would you be interested in officially certifying it? Select one or several.

Select all that apply.

- ☐ Grade A: 5 to 160 hours
- ☐ Grade B: 30 to 430 hours
- ☐ Grade C: 220 to 1190 hours
- ☐ No, I'm not interested.

I don't know the system

12. Would you be interested in receiving information about it? *

Select one option.

- ☐ Yes
- ☐ No

13. What type of certification system would you like to receive information about? *

Select one option.

- ☐ Training
- ☐ Accreditation of work experience
- ☐ Both training and accreditation of work experience

Training in the Automotive Sector

14. In the future, do you consider the possibility of working with Hybrid/Electric Vehicles? *

Select one option.

- ☐ Yes
- ☐ No, I prefer combustion engines
- ☐ Yes, I plan to take the specialization course
- ☐ No, but I'm more interested in machinery

15. What do you consider the ideal format for a short VHE/EV training course? *

Select one option.

- ☐ 100% in-person (Practice-focused)
- ☐ Blended learning (Online theory, in-person practice)
- ☐ 100% online (Only if theory is sufficient)

16. Regarding duration, what type of VHE/EV training would you sign up for? *

Select one option.

- ☐ Less than 15 hours
- ☐ 15–30 hours
- ☐ 30–60 hours
- ☐ More than 60 hours (No longer considered "short")

Micro-credentials

Micro-credentials (Grade A) are short training modules that, when accumulated, can lead to a full qualification (Grade B and/or C).

17. Were you aware of the existence of micro-credentials? *

Select one option.

- ☐ Yes → Skip to question 19
 - ☐ Yes, but I don't know anything about them → Skip to question 22
 - ☐ No → Skip to question 22
-

I know about micro-credentials

18. Knowing that a micro-credential is short-duration training, would you be interested in taking one? *

Select one option.

- ☐ Yes, if it leads to official certification
- ☐ Yes, even without official certification
- ☐ No, it's too short to specialize

19. What other training would you like to receive besides what is taught at the center? *

20. Do you feel that the training you are currently receiving in your program is enough to work with VHE/EV? *

Select one option.

- ☐ Yes, I feel confident
 - ☐ I have the basics but need more practice
 - ☐ No, I feel lost
-

I don't know about micro-credentials

21. Would you be interested in receiving information about them? *

Select one option.

- ☐ Yes
- ☐ No

Sector Needs

22. What is your level of motivation when facing the job market? *

Select one option.

- ☐ I'm eager to start working
- ☐ I prefer to continue training in my field
- ☐ I want to keep studying while working
- ☐ I'm not interested in studying or working
- ☐ I'd like to start working soon, but I don't feel prepared and prefer to continue training
- ☐ I prefer to train in a different field

23. If you selected "start working," what is your motivation for that?

24. If you selected "continue training," what is your motivation for that?

25. Which of the following training areas would be useful to complement automotive-sector training? (You may add others under "Other") *

Select all that apply.

- ☐ Administration and finance
- ☐ Electronics
- ☐ Electricity
- ☐ Welding
- ☐ Machining
- ☐ IT systems
- ☐ Other:

26. What other technical skills (tool handling, process agility, etc.) do you consider important for your profile?

27. What other soft skills (teamwork, punctuality, customer service, etc.) do you consider important for your profile?

28. Other suggestions:

The Future of the Automotive Sector

29. Which technology do you think will dominate the market? *

Select one option.

- ☐ Hybrid Electric Vehicles (HEV)
- ☐ Plug-in Electric Vehicles (PHEV)
- ☐ Non-plug-in Electric Vehicles
- ☐ Hydrogen
- ☐ LPG
- ☐ CNG
- ☐ Biofuels
- ☐ Synthetic e-fuels
- ☐ Other:

30. What do you think the future holds for small automotive workshops? *

