HISTEK

Sharing the Vision of a new CB educational cooperation

Project presentation

Project goals

TO STRENGTHEN THE COMPETITIVENESS OF ITALIAN, ALBANIAN, MONTENEGRINE SMEs

BY CONNECTING THE WORLD OF EDUCATION AND WORLD OF BUSINESS

FOCUSING ON THE EMPOWERMENT OF HUMAN CAPITAL

ON NEW TECHNOLOGIES

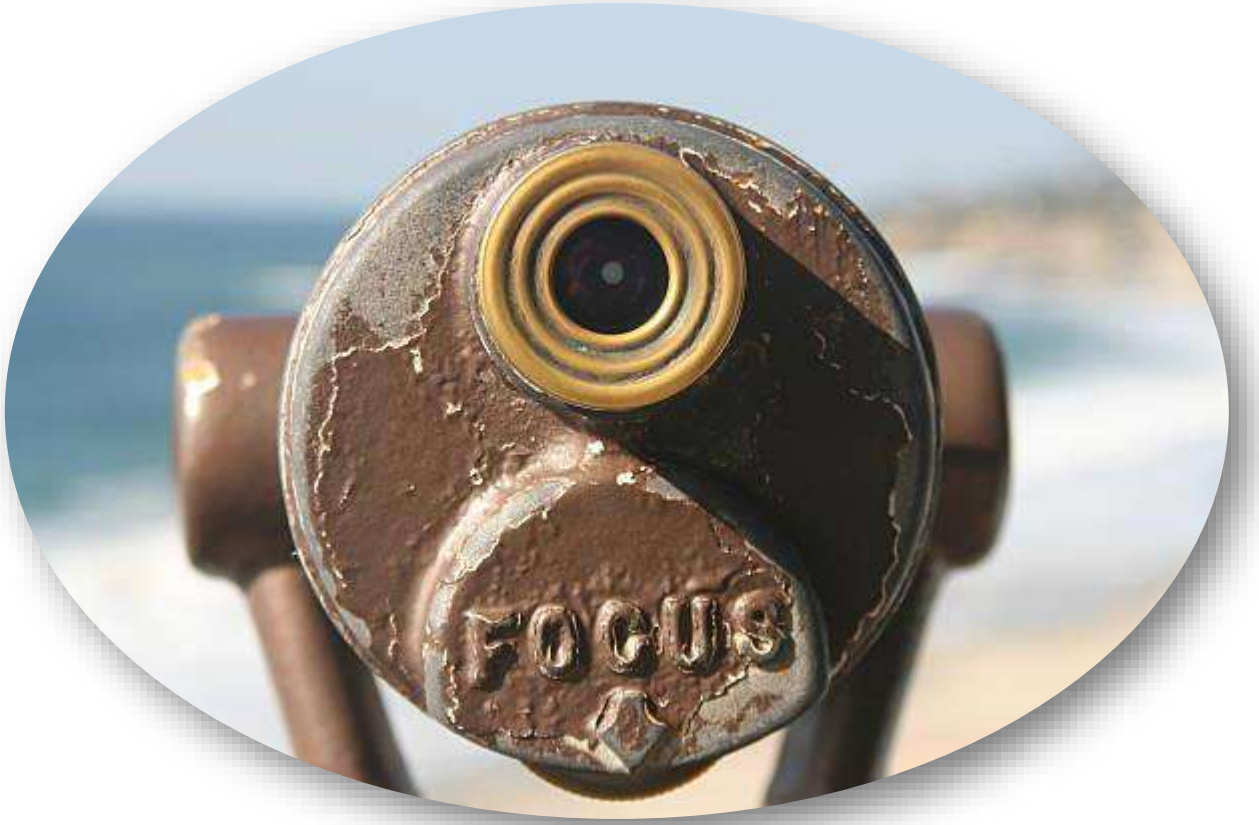
SMEs

TO MAKE INTERNATIONALIZATION AND INNOVATION PROCESSES MORE SUSTAINABLE

TO TRAIN HIGHER TECHNICIANS / MIDDLE-SKILLED WORKERS

TO ALIGN THEM TO THE REAL NEEDS OF SMEs

TO FAVOR THE CROSS-BORDER MOBILITY OF YOUNG PEOPLE



KETs

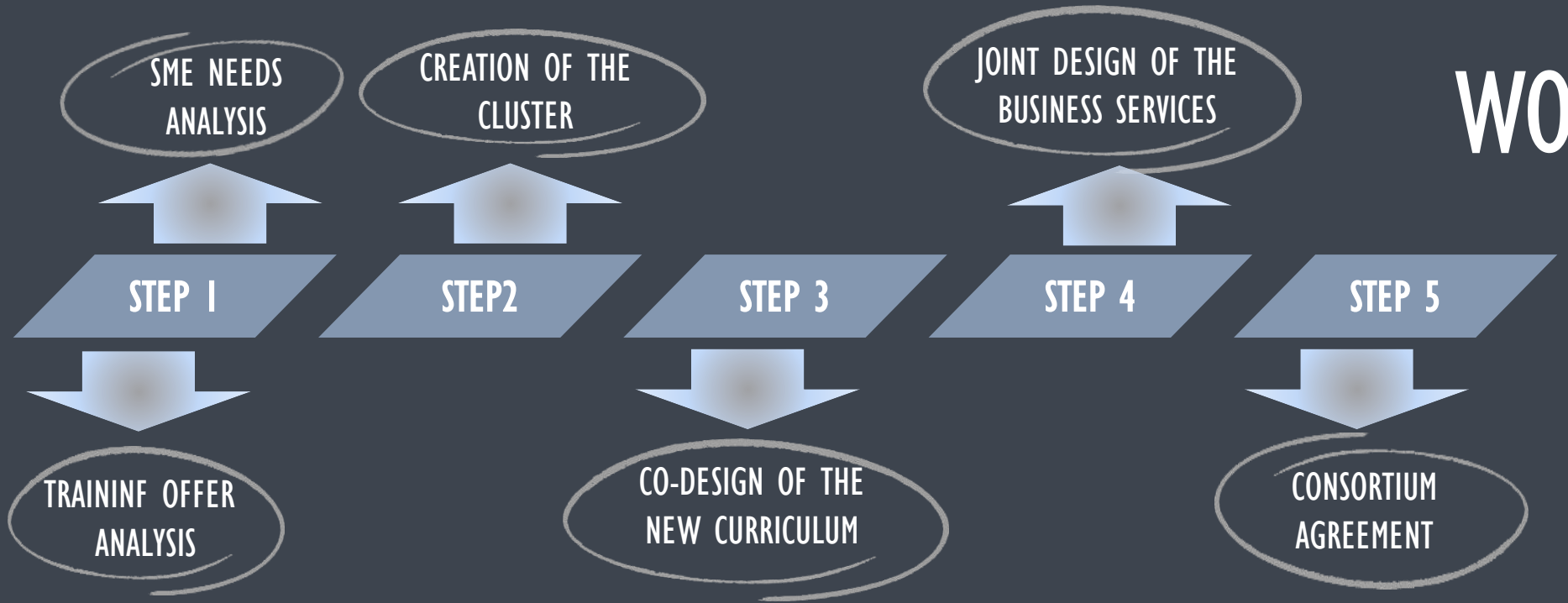
KETs PROMOTED BY THE EUROPEAN COMMISSION FOR GROWTH AND DEVELOPMENT

REPRESENT THE FUNDAMENTAL BACKGROUNG

TO SUPPORT PRODUCT AND PROCESS INNOVATION

THEY ARE CRUCIAL IN THE MODERN EDUCATION OF YOUNG PEOPLE

WORK PLAN


SME NEEDS ANALYSIS
CREATION OF THE CLUSTER
JOINT DESIGN OF THE BUSINESS SERVICES
STEP 1
STEP2
STEP 3
STEP 4
STEP 5
TRAININF OFFER ANALYSIS
CO-DESIGN OF THE NEW CURRICULUM
CONSORTIUM AGREEMENT

CONSORTIUM

Ministry of Education of Montenegro (**Applicant**)

Chamber of Economy of Montenegro_P2

Fondazione ITS Antonio Cuccovillo_P3

Chamber of Commerce of Bari_P4

Faculty of Business, "Aleksandër Moisiu" University, Durrës_P5

Chamber of Commerce of Tiranë_P6

ANALYSIS OF THE TRAINING OFFER IN THE 3 COUNTRIES

FOCUS ON KEY ENABLING TECHNOLOGIES – KET 6: ADVANCED MANUFACTURING

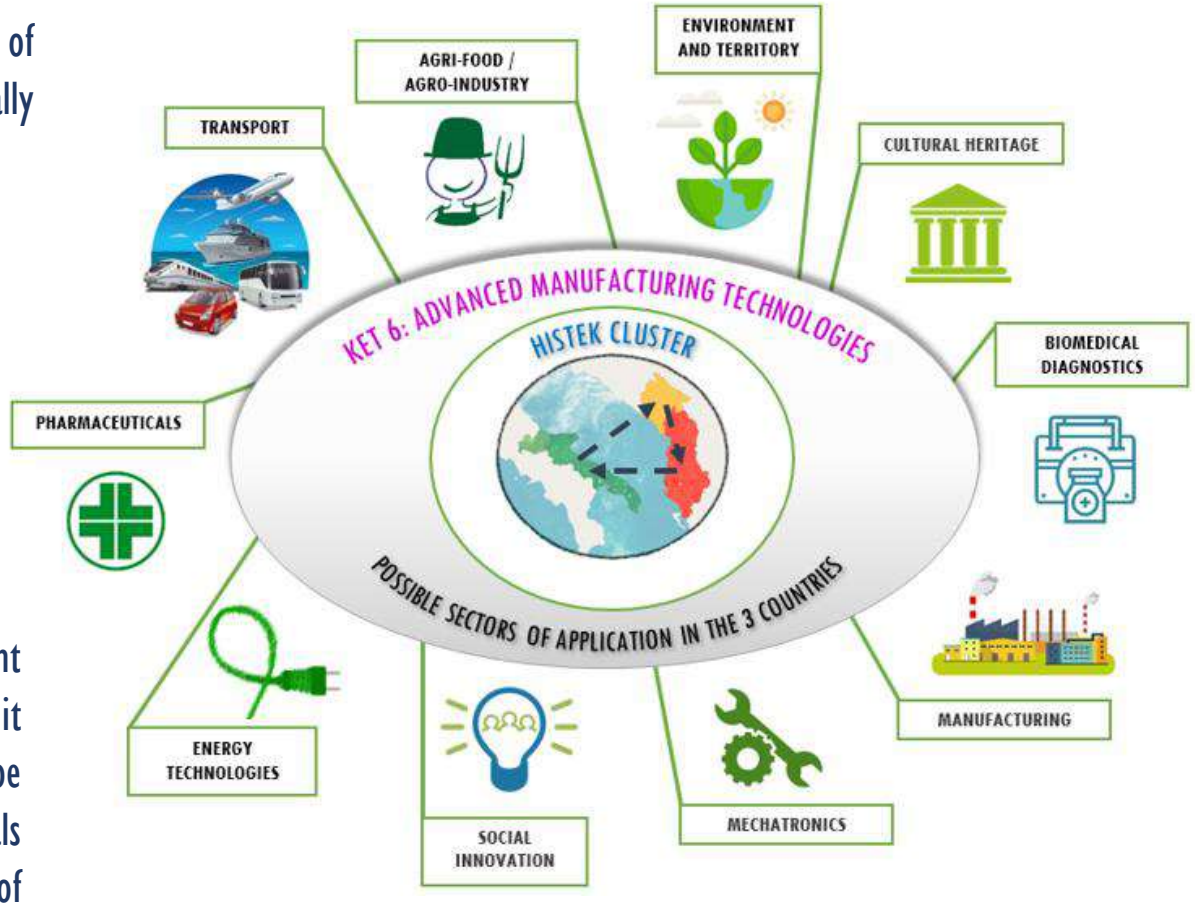
Interreg - IPA CBC
Italy - Albania - Montenegro
HISTEK

The European Commission has given KETs a strategic role, recognizing them as one of the cornerstones of the technological development strategies of companies, especially SMEs, and identifying six of them:

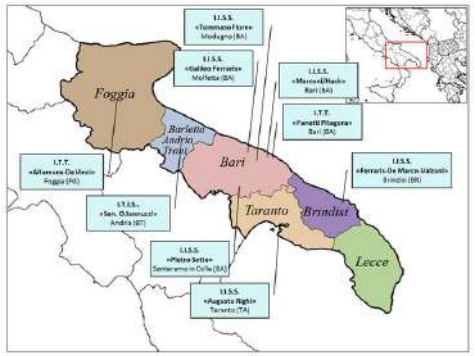
KET 1 - MICRO/NANOELECTRONICS
KET 2 - NANOTECHNOLOGIES
KET 3 - INDUSTRIAL BIOTECHNOLOGY
KET 4 - PHOTONICS
KET 5 - ADVANCED MATERIALS
KET 6 - ADVANCED MANUFACTURING TECHNOLOGIES

From a **methodological point of view,** the analysis of the training offer has been pointed out, as initial first pilot action, on **Advanced Manufacturing Technologies (KET 6)**.

The working method adopted (both in the needs analysis and the consequent elaboration of the training path) represents a **further project output**, as it will constitute **a guide** (with procedures and standards) that can subsequently be adopted **to replicate** in the three countries new further Short Cycle proposals focusing on other enabling technologies with impact on different sectors of production and services.



TARGET INVOLVED



PUGLIA

- 9 High Schools or Upper Secondary Schools (Technological field)
- ITS CUCCOVILLO

ALBANIA

- 10 High Schools or Upper Secondary Schools (ICT and Technological field)

MONTENEGRO

- 48 High Schools or Upper Secondary Schools (Technological field)

Interreg - IPA CBC
Italy - Albania - Montenegro
HISTEK

EDUCATIONAL INSTITUTIONS DATA

CONTEXT:

- **Material resources** (technical-technological equipment and laboratories; classrooms..)
- **Professional resources** (skills possessed by teachers, with specific focus on KETs)
- **Relations with the territory** (existing links between education and business)

TRAINING OFFER:

Transversal skills:

Explored the training offer in the framework of two specific categories of transversal skills:

1. MANAGEMENT AND ENTREPRENEURSHIP
2. QUALITY, RISK & SAFETY

Technical skills:

Explored the training offer in the framework of six specific categories of technical-technological skills at the base of KET 6 (Advanced Production Technologies):

1. PRODUCTION TECHNOLOGIES AND AUTOMATION
2. ICT AND SOFTWARE APPLICATIONS FOR THE AUTOMATION OF PRODUCTION SYSTEMS
3. INNOVATIVE INDUSTRY 4.0 TECHNOLOGIES
4. INNOVATIVE PRODUCTION PROCESSES
5. OPTIMIZATION AND MANAGEMENT TECHNIQUES OF PRODUCTION SYSTEMS
6. ECO-SUSTAINABLE TECHNICAL AND TECHNOLOGICAL SOLUTIONS

GUIDANCE ACTIVITIES:

Analysis of the guidance activities implemented by each Educational Institutions to promote the study of Key Enabling Technologies towards young students.

QUESTIONNAIRE SUBMITTED IN THE 3 COUNTRIES

Interreg - IPA CBC
Italy - Albania - Montenegro
HISTEK

ANALYSIS OF THE TRAINING OFFER: PUGLIA

Interreg - IPA CBC
Italy - Albania - Montenegro
HISTEK

PROJECT: "HIGH SPECIALIZED TECHNICIANS IN KETs"

ACRONYM: HISTEK

Report

Analysis of the training offer related to KETs
Country Report: Italy (Puglia Region)

Work package No. T1:	Analysis of the training offer related to KETs
Activity No. 1.3:	Analysis of the training offer related to KETs - Report
Deliverable N.: D.T1.3.1	Educational Institutions Assessment - Country: Italy
Revision N.:	Final
Dissemination Level:	Confidential
Authors:	Annamaria Patella, Roberto Vingiani, Lucia Scattarelli
Organization:	ITS A. Cuccovillo
Date:	30/04/2019
Project No.:	229

PROJECT NAME: "HIGH SPECIALIZED TECHNICIANS IN KETs" - ACRONYM: HISTEK - PROJECT NUMBER: 229

PICTURE OF THE EQUIPMENT: a good situation emerged in terms of locations, classrooms, laboratories, PCs.

SKILLS RESOURCES:

1) a good coverage situation with regard to the more "traditional" skills such as "Quality, Risk and Safety" "Management of production systems", ICT and automatic systems ";
2) a situation of limited coverage with regard to the most innovative skills such as e.g. "Innovative process", "Innovative products", "Eco-sustainable technologies".

ITS skills are more concentrated on most innovative skills, thus integrating the set of skills already in the availability of upper secondary schools.

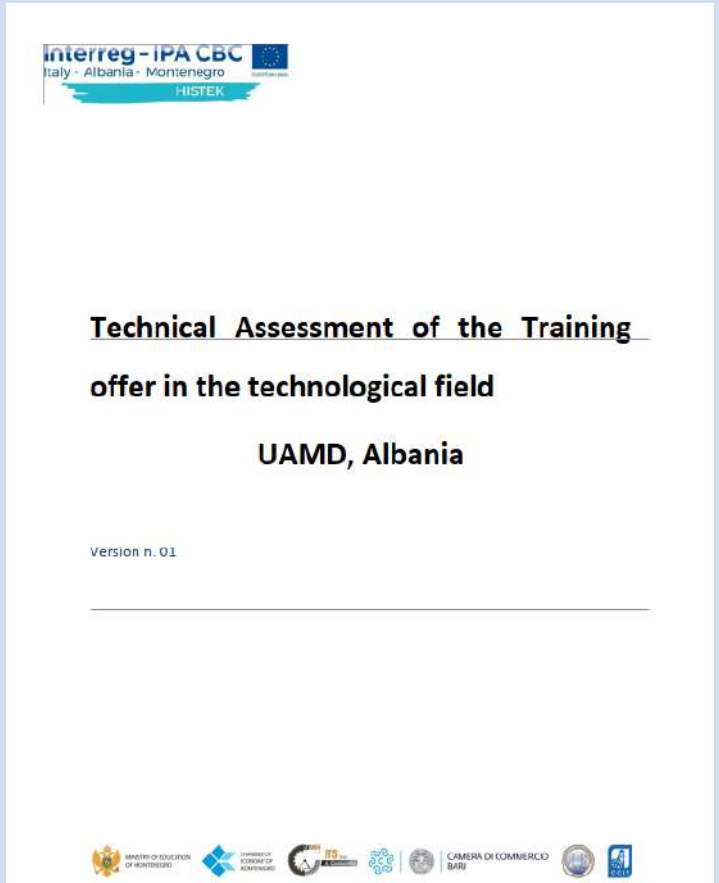
TEACHING METHODS: good coverage declared by upper secondary schools on communication skills, while managerial skills and emotional / intelligence skills need to be better integrated.

COLLABORATIONS WITH COMPANIES: a good situation emerged. Schools and ITS are very active in implementing collaborations education/business.

KEY ENABLING TECHNOLOGIES: competences not fully covered are: "Innovative Production processes" and "Innovative Industry 4.0 technologies", "Eco-sustainable technical and technological solutions", "ICT and software applications for the automation of production systems". Data showed the general improvement of the coverage situation through the 5° level courses (ITS)

GUIDANCE ACTIVITIES: The section on orientation activities showed the remarkable activities carried out in this area that seems to represent an important initial element to activate solid and effective collaborations education/business.

ANALYSIS OF THE TRAINING OFFER: ALBANIA


Interreg - IPA CBC
Italy - Albania - Montenegro
HISTEK

Technical Assessment of the Training offer in the technological field

UAMD, Albania

Version n. 01

PICTURE OF THE EQUIPMENT: a sufficient situation emerged in terms of locations, classrooms, laboratories, PCs.

SKILLS RESOURCES:

1) a good coverage situation with regard to the more "traditional" skills such as "Quality, Risk and Safety" "Management and Entrepreneurship", Innovative production technologies";
2) a limited coverage with regard to the most innovative skills such as e.g. "Innovative process", "Industry 4.0" and "Eco-sustainable technologies".

TEACHING METHODS: Excellent coverage declared by high schools on managerial and communication skills while emotional and innovation skills need to be better integrated.

COLLABORATIONS WITH COMPANIES: a very good situation emerged. Schools and SMEs are very collaborative mostly in manufacturing and mobility sectors.

KEY ENABLING TECHNOLOGIES: competences not covered are: "Innovative Production processes", "Innovative Industry 4.0 technologies" and "Eco-sustainable technical and technological solutions". Data showed that 1/3 of the interviewees treat KETs only in the case of projects activated ad hoc on specific enabling technologies.

GUIDANCE ACTIVITIES: For 40% of the interviewees the best way to make KETs more attractive is by intensifying internships and school-work alternation activities in collaboration with companies.

ANALYSIS OF THE TRAINING OFFER: MONTENEGRO

Interreg - IPA CBC
Italy - Albania - Montenegro
HISTEK

PROJECT: "HIGH SPECIALIZED TECHNICIANS IN KETs"

ACRONYM: HISTEK

Report

Analysis of the training offer related to KETs
Country Report: Montenegro

Work package No. T1:	Analysis of the training offer related to KETs
Activity No. 1.3:	Analysis of the training offer related to KETs - Report
Deliverable N.: D.T1.3.1	Educational Institutions Assessment - Country: Montenegro
Revision N.:	0.1
Dissemination Level:	Confidential
Authors:	Dragiša Damjanović, Dina Tošić
Organization:	Ministry of Education of Montenegro
Date:	30/03/2019
Project No.:	229

PROJECT NAME: "HIGH SPECIALIZED TECHNICIANS IN KETs" - ACRONYM: HISTEK - PROJECT NUMBER: 229

PICTURE OF THE EQUIPMENT: a good situation emerged in terms of locations, classrooms, laboratories, PCs.

SKILLS RESOURCES:

1) a good coverage situation with regard to the more "traditional" skills such as "Quality, Risk and Safety", "Management of production systems", ICT and automatic systems ";
2) a limited coverage with regard to the most innovative skills such as e.g. "Innovative process", "Industry 4.0" and "Eco-sustainable technologies".

TEACHING METHODS: Montenegro is mostly concentrated on behavioral skills such as "Communication skills" and "Emotional intelligence skills".

COLLABORATIONS WITH COMPANIES: Schools and companies have practically no collaboration. Only 1,7% declared relationships between education and businesses.

KEY ENABLING TECHNOLOGIES: competences not covered are: "Innovative Production processes", "Innovative Industry 4.0 technologies" and "Eco-sustainable technical and technological solutions". Data showed the necessity to have a strategic document used for KETs-oriented qualification development.

GUIDANCE ACTIVITIES: these activities must be defined in a better and more effiecient way. In Montenegro, there is a Centre for Informing and Professional Consulting (CIPS), but its activities are insufficiently KETs oriented.

ANALYSIS OF THE SMEs NEEDS

IN THE 3 COUNTRIES

Interreg - IPA CBC
Italy - Albania - Montenegro
HISTEK

WHAT SMEs SAID

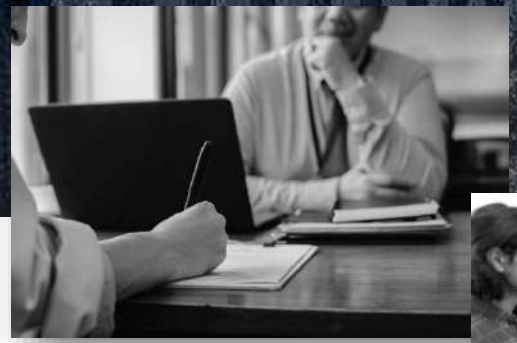
By the interview of the 75 SMEs, the following opportunities emerged:

- **There is a fertile ground:** aligning the training offer to the real needs of businesses
- **KETs are an opportunity**: companies are increasingly moving towards the area of KET
- **We could increase the knowledge**: A transnational course may offer the possibility of creating a "nursery" of highly specialized technicians
- **We could create new assets**: transversal soft skills as key asset for modern companies

ASSISTANCE AND MAINTENANCE JOB PROFILE

Interreg - IPA CBC
Italy - Albania - Montenegro
HISTEK

PILOT ACTIONS:



TOOLKIT FOR SELECTION

GUIDELINES AND TOOLKIT FOR TRAINING ON THE JOB

THE STRUCTURE OF THE NEW CURRICULUM

GUIDELINES AND TOOLKIT FOR MENTORING DURING INTERNSHIPS

CROSS-BORDER CLUSTER

MINISTRY OF EDUCATION OF MONTENEGRO
CHAMBER OF ECONOMY OF MONTENEGRO
ITS Bari A. Cuccovillo
CAMERA DI COMMERCIO BARI
CCIT

TOOLKIT I TOOLKIT FOR THE SELECTION OF NEW TECHNICIANS

About this toolkit

This toolkit includes all the steps required to plan a recruiting process, from a Cross-Border perspective, focused on the specific target of Higher Technicians

TOOLKIT 2 GUIDELINES AND TOOLKIT FOR SME TRAINERS

About this toolkit

PROFILE OF THE TEACHER/TRAINER	THEORETICAL LESSONS: PREPARE	THEORETICAL LESSONS: DO	THEORETICAL LESSONS: REFLECT	PRACTICAL LESSONS:	ANNEXES
THE TEACHER/TRAINER PROFILE	OVERVIEW & TIPS	OVERVIEW & TIPS	OVERVIEW & TIPS	OVERVIEW & TIPS	FURTHER TIPS
THE TEACHER/TRAINER SKILLS					

This toolkit is for SME trainers involved in cross-border training processes.
It aims to encourage and enable common standards Education/Business in the training, inside the company, of Higher Technicians, attending CB 5° level EQF pathways.

MINISTRY OF EDUCATION OF MONTENEGRO · CHAMBER OF ECONOMY OF MONTENEGRO · ITS A. Cuccovillo · CAMERA DI COMMERCIO BARI · CCIT

Interreg - IPA CBC
Italy - Albania - Montenegro
HISTEK

TOOLKIT 3

GUIDELINES AND TOOLKIT FOR MENTORING CARRIED OUT BY COMPANY STAFF DURING INTERNSHIPS

About this toolkit

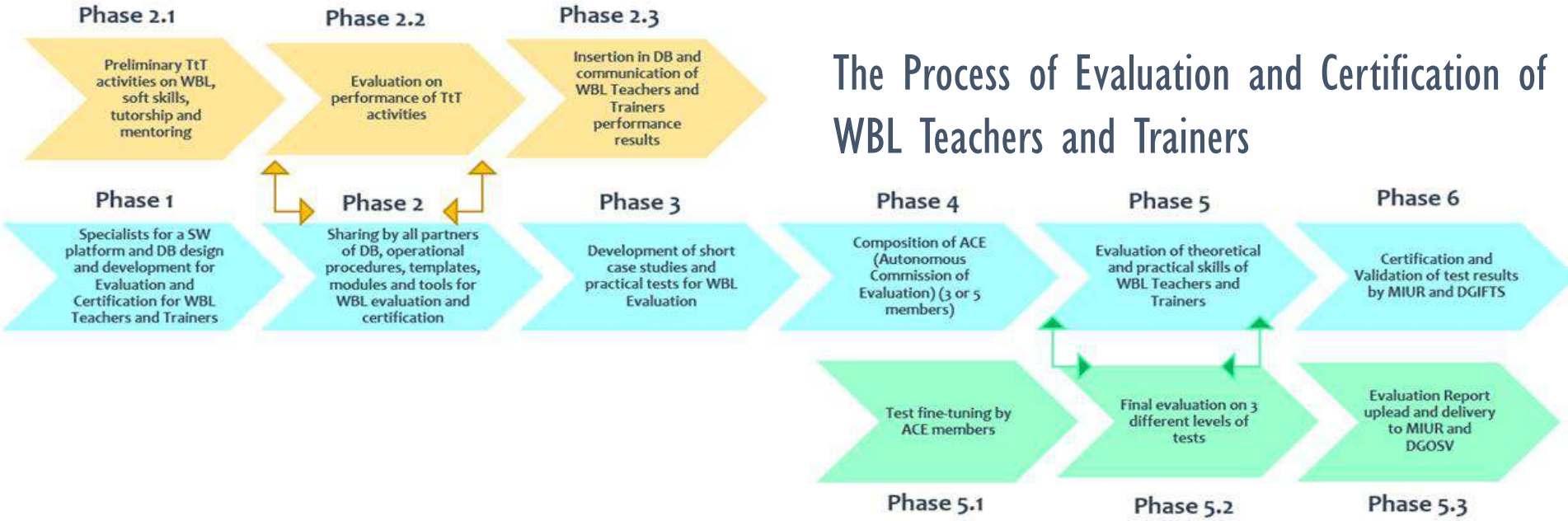
This toolkit is for SME tutors/mentors involved in cross-border internship / apprenticeship processes.

It aims to encourage and enable common standards Education/Business in the tutoring/mentoring, inside the company, of Higher Technicians, attending CB 5° level EQF pathways.

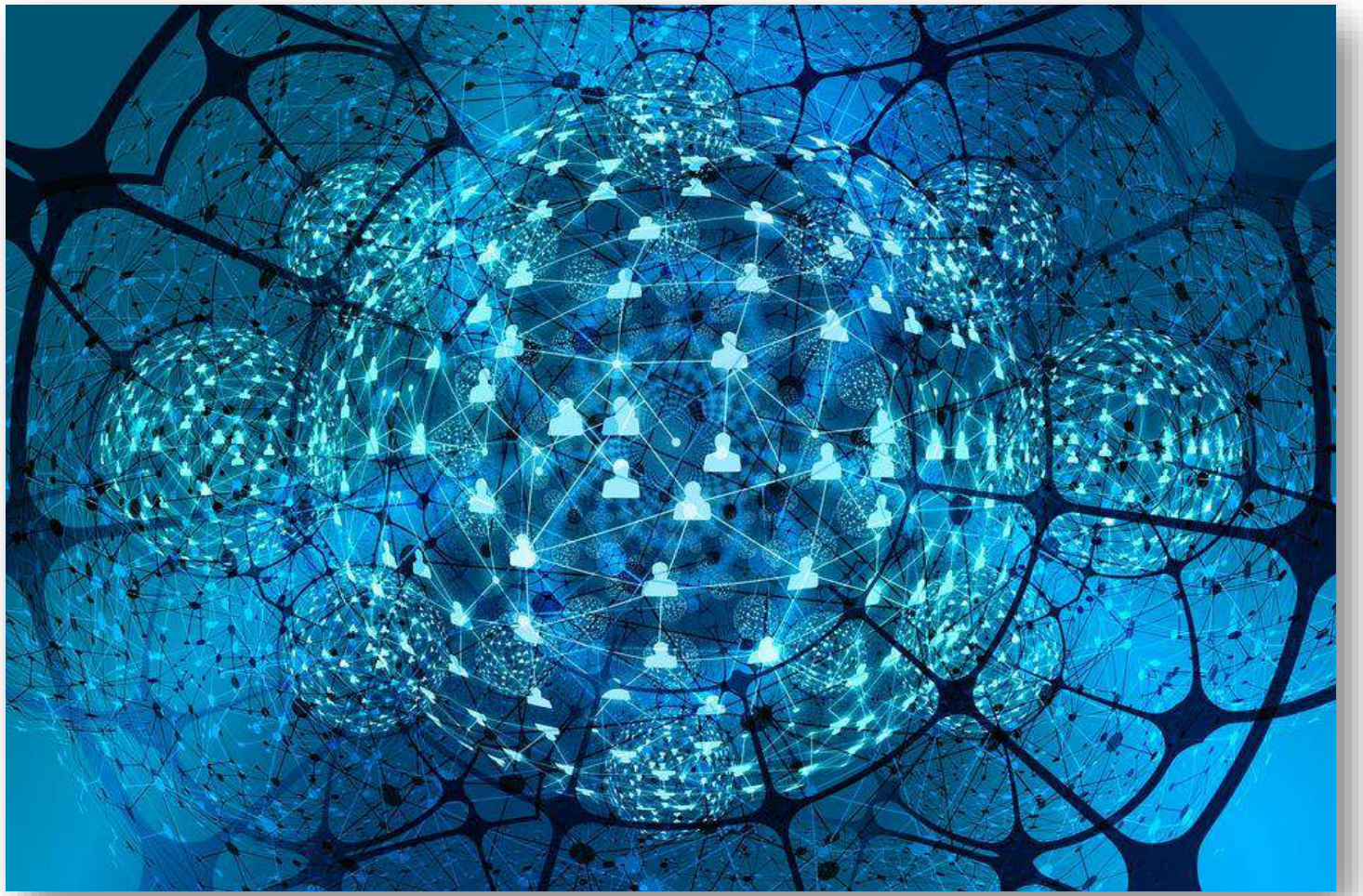
CBC ASSESSMENT TOOLKIT

WBL - Work Based Learning

During the project, a comparative analysis at European level of the certification systems of the trainers' skills was carried out and a possible certification path was envisaged with the involvement of the Chambers of Commerce:



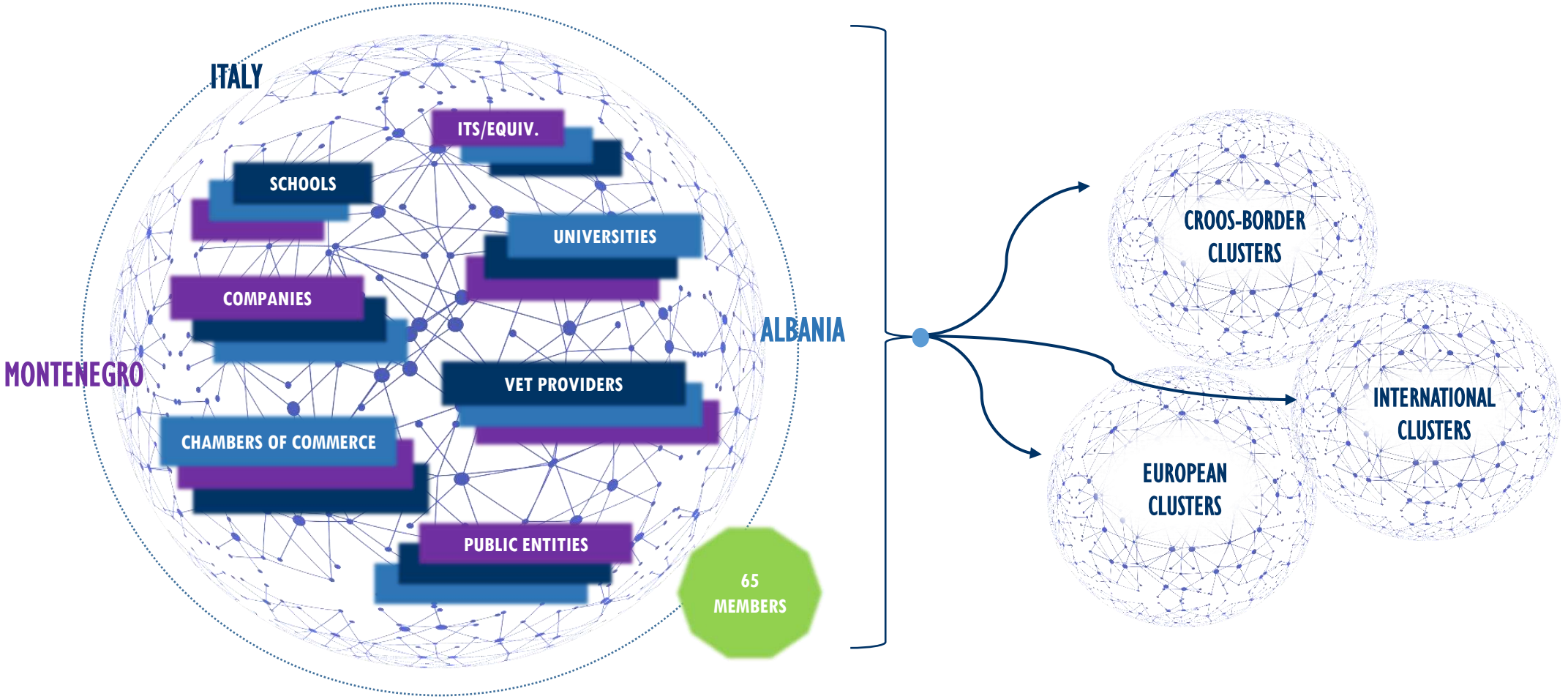
The Process of Evaluation and Certification of WBL Teachers and Trainers



PILOT ACTIONS:

THE CLUSTERS

HISTEK CLUSTER: A cross-border ecosystem for innovation and competitiveness



MINISTRY OF EDUCATION OF MONTENEGRO | CHAMBER OF ECONOMY OF MONTENEGRO | ITS A. Cuccovillo | CAMERA DI COMMERCIO BARI | CCIT

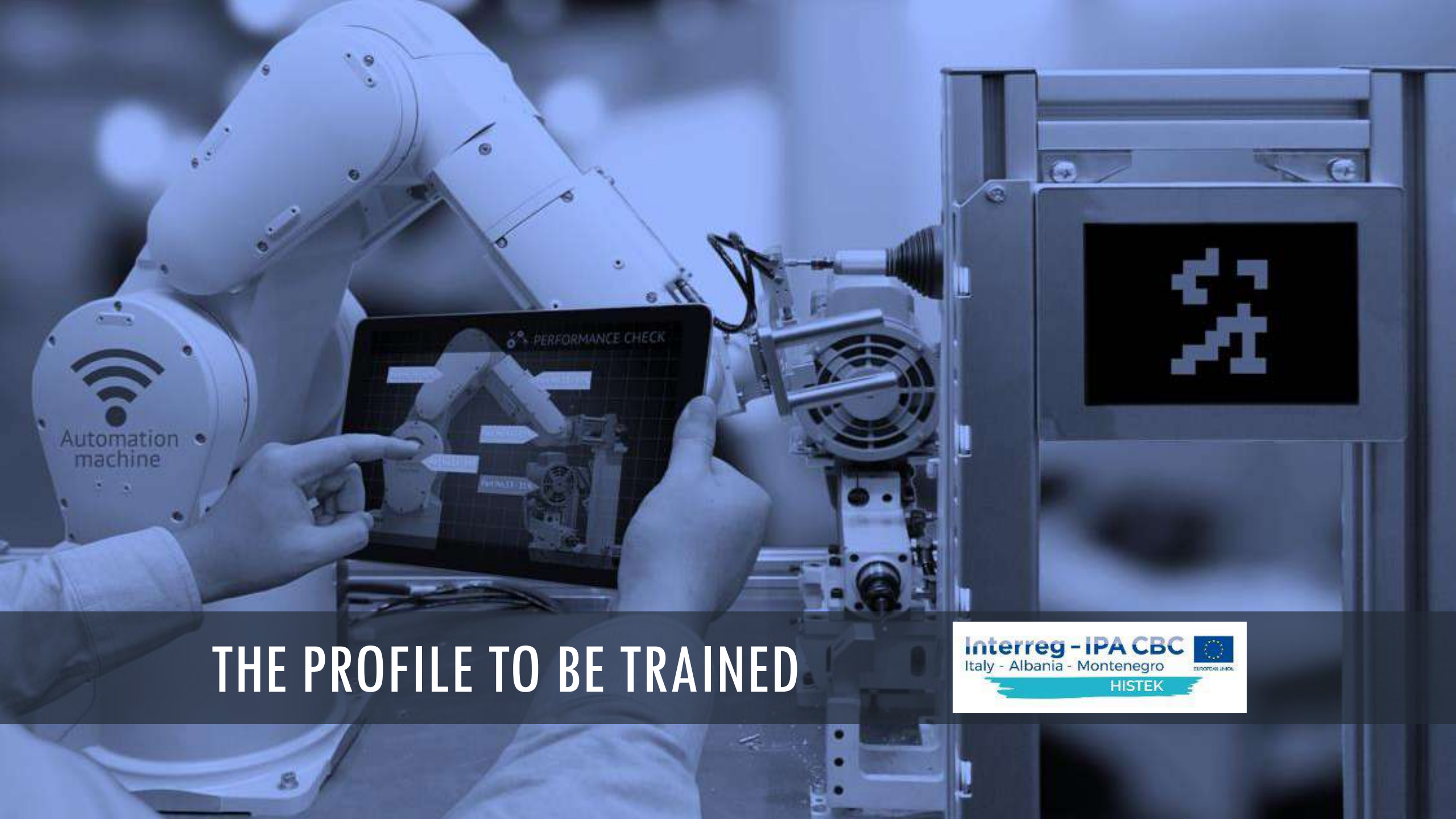
Interreg - IPA CBC
Italy - Albania - Montenegro
HISTEK

HISTEK

CB Higher Technician for 4.0 Maintenance

THE STRUCTURE OF THE NEW CURRICULUM

Interreg - IPA CBC
Italy - Albania - Montenegro
EUROPEAN UNION
HISTEK



THE PROFILE TO BE TRAINED

Interreg - IPA CBC
Italy - Albania - Montenegro
HISTEK

The TASKS

HISTEK

CB Higher Technician for 4.0 maintenance

- Performs maintenance on mechatronic systems
- Periodically inspects the state of systems, machines and automations
- Plan the schedule of preventive / predictive maintenance interventions (with I4.0 technologies)
- Ensures that mechatronic equipment is kept in efficient condition
- Guarantees compliance of machinery with safety standards
- Acts immediately in case of breakdowns
- Repair and replace broken or defective components
- Check the functioning and efficiency of the repaired machinery
- Carries out document maintenance activities
- Operates at the Cross Border level

THE KEY COMPETENCES

CB Higher Technician for 4.0 maintenance

- Knowledge of the functioning of mechatronic systems
- Ability to read the mechanical technical drawing and electrical diagrams
- Manual ability to perform maintenance activities
- Competence in the use of computerized software and maintenance management systems in a 4.0 perspective
- Ability to work independently and as part of a team of technicians
- In-depth knowledge of the 3 country contexts and the entrepreneurial fabric that characterizes them
- Analytical skills and problem solving
- Communication skills
- Reliability and flexibility

The new curriculum at a glance

Interreg - IPA CBC
Italy - Albania - Montenegro
HISTEK

Numbers of participants:

25 students
selected in the 3 countries

Training

n. 1.200 hours

29% theory
10% practice
21% laboratory

Itinerant:

- **Modules in presence in the country of origin**
- **Online Modules**
- **Common modules in presence with transnational steps at training entities of the 3 territories**

Total path

n. 2.000 hours

2 years

Extra curricular activities

More than 300 hours

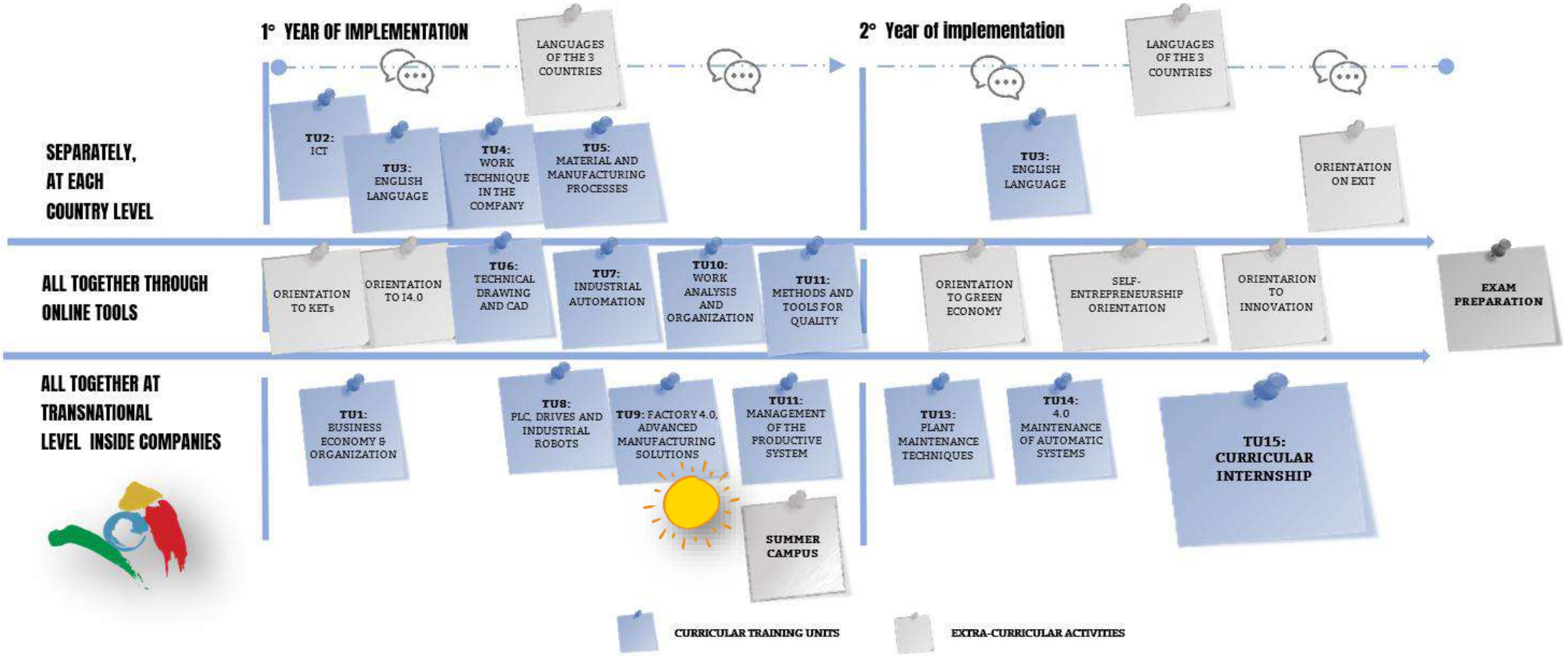
Curricular internship

n. 800 hours

40% of the path
Inside SMEs of the 3 countries

The proposal

Interreg - IPA CBC
Italy - Albania - Montenegro
HISTEK

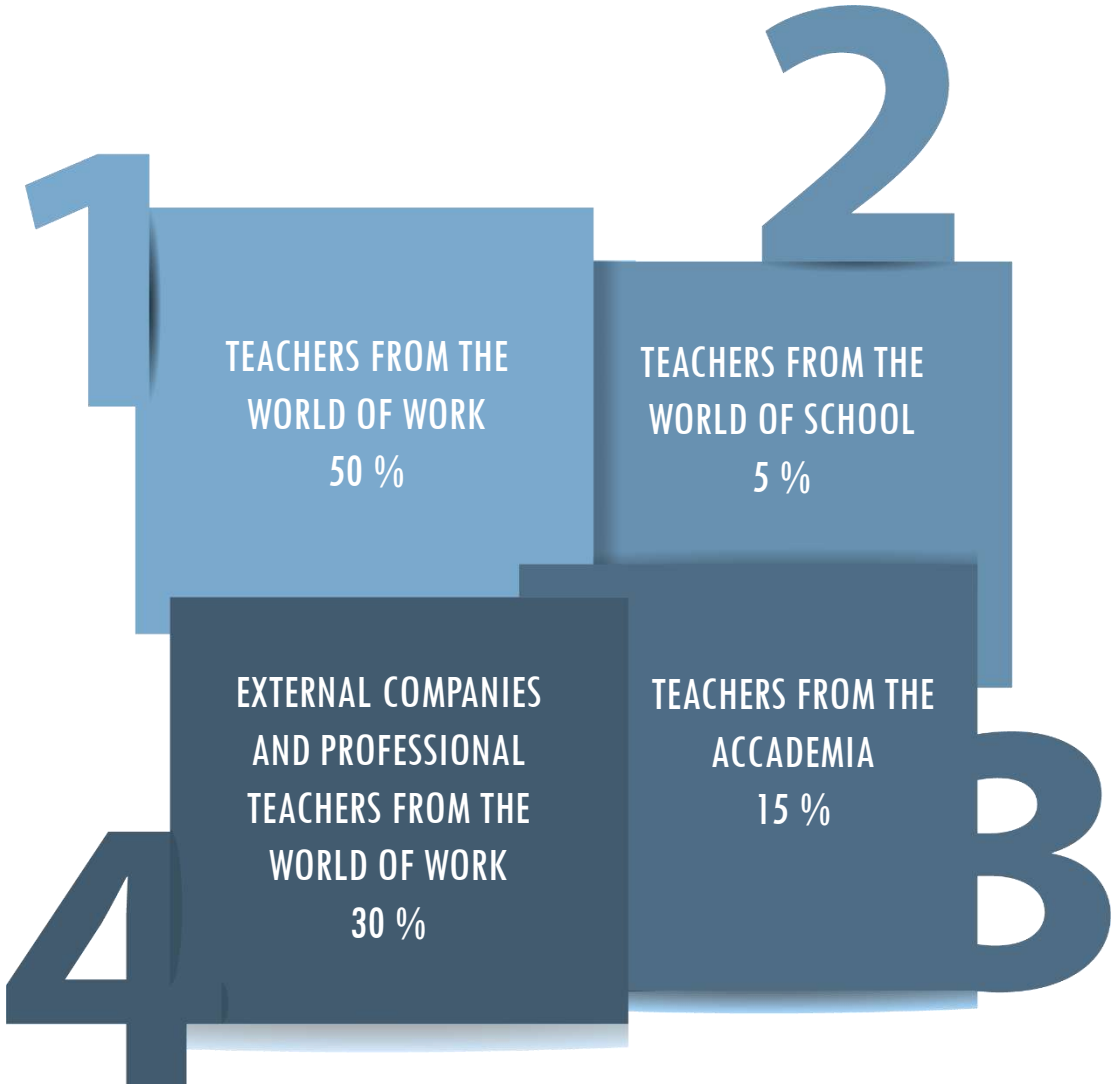


TRAINERS:
to whom to entrust the training

The teaching staff will consist of a selected and qualified core faculty, drawing on the best professionals present in the 3 territories.

The teaching staff must ensure excellence in the preparation of the students.

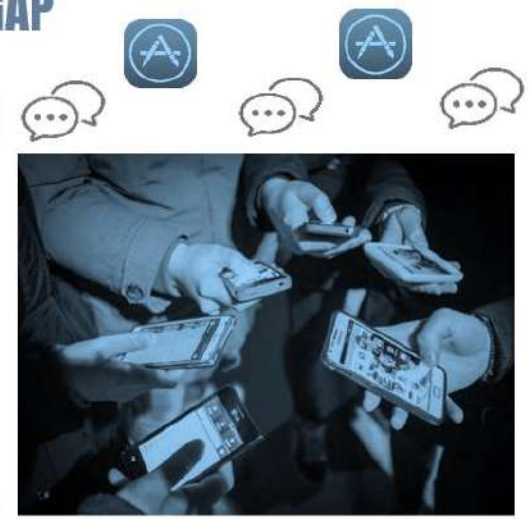
The Technical-Scientific Committee of the course, made up of representatives of the 3 countries, will take care to define the criteria for assigning teaching to the 4 categories of subjects who will be involved in the training process.



SUPPORT THE INTERACTION BETWEEN STUDENTS:

OVERCOMING THE LINGUISTIC GAP

To plan the study of the English language but also of the 3 languages of the Consortium (Albanian, Italian, Montenegrin) throughout the whole duration of the path



To create a CHAT or a dedicated APP for which the 3 groups of students (8 x each country) can interact with each other to learn the 3 languages. Periodic conversations can be scheduled in each of the 3 languages, with focus on topics of common interest (e.g. music, sports, holidays, work, aspirations, entertainment .....)

CONTINUOUS MONITORING OF LEARNINGS

Every month

LESSONS LEARNED

Plenary sessions on the most 10 important things they have learned

Interreg - IPA CBC
Italy - Albania - Montenegro
HISTEK

COOPERATIVE LEARNING

Final sessions at the end of the Training units in which, in turns, in the 3 languages, students are engaged in self-teaching / sharing activities

VALIDATION AND CERTIFICATION OF SKILLS' SYSTEM

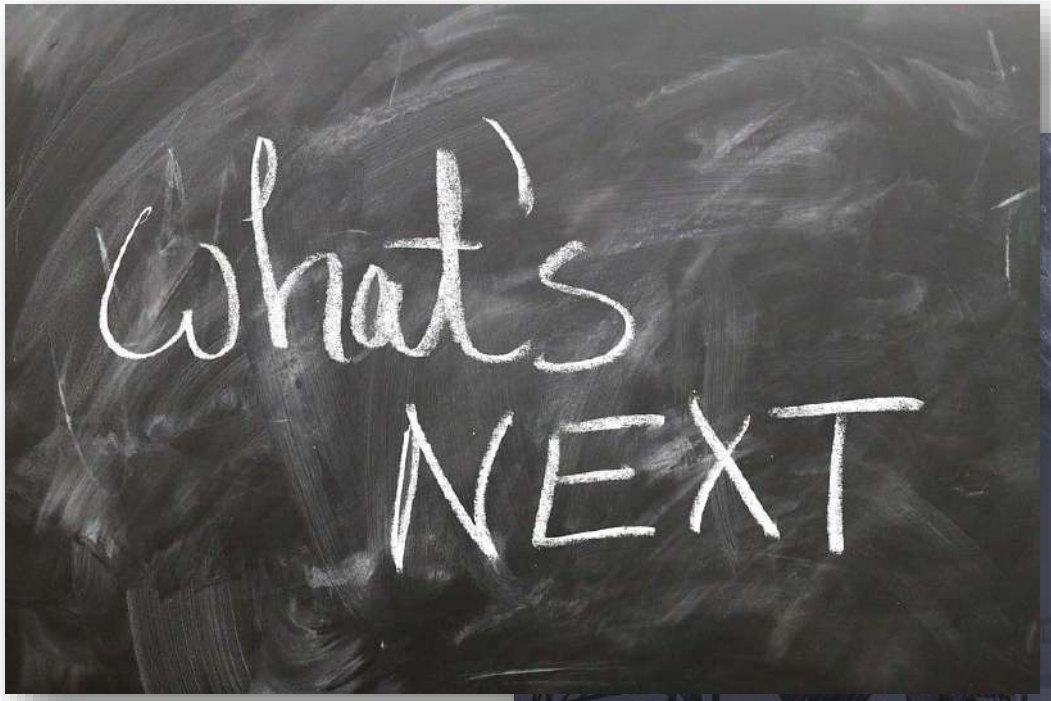
CURRICULAR EXAMS: taken for each Training Unit with written and oral tests

FINAL EXAMINATIONS (MIXED COMMISSION WITH REFERENCES OF THE INSTITUTIONS AND PARTICIPATING COMPANIES)

a) **a theoretical - practical test:** technical - scientific problem, closely related to the technological and reference area of the training course.
b) **a written test:** a questionnaire of 30 closed-ended multiple choice questions. In particular, the questions are divided into 5 sections relating to different common thematic areas and characterizing the outgoing profile.
c) **an oral exam:** discussion of the project work developed during the internship on a specific topic defined by the companies where the internship was carried out. The discussion of the thesis is carried out in part in English and is introduced by the company tutor who followed the student.

EDUCATIONAL CREDITS: 120 TOTAL CREDITS (60 per academic year)

FINAL TITLE: DIPLOMA OF "HIGHER TECHNICIAN", recognized in the 3 countries and accompanied by the supplement "EUROPASS Diploma Supplement"


what's
NEXT

VISION: INTEGRATION

EQF 5

CB HIGHER VOCATIONAL TRAINING SYSTEM

Interreg – IPA CBC
Italy - Albania - Montenegro
EUROPEAN UNION
HISTEK

Interreg IPA
South Adriatic
Enhancing cooperation between
Italy, Albania, Montenegro

THANKS FOR YOUR ATTENTION!

Project website:
histek.italy-albania-montenegro.eu

E-mail me at:
iro@itsmeccatronicapuglia.it

Follow us on scial media: