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Development of a training path for European Furniture Experts in Designing and Manufacturing of AAL Integrated Furniture for the Care and Support of Elderly and Disabled People.

VETAAL

Progress Report

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Executive Summary

Currently, having a job is not only a source of income, but also an important tool to be part of the community for any group, and it is really important that workers have the suitable training to do their work properly and in a safe way. Some job positions have changed a lot during the last years because of technical or social changes. For instance the fast-growing elderly population in Europe requires solutions like AAL (Ambient Assisted Living) to care their needs and improve their quality of life. In fact, furniture has certain features that can improve the non-intrusive monitoring of users and interaction of AAL systems, but in spite of this, actually, workers are not still ready for the right implementation of these systems because there are not training programs. Moreover, most of the designers don't have the required skills, competences or knowledge to create and compose products according actual safety and mechanical needs (CE marked, ISO standards) that these products have to satisfy in order to fulfil legal and safety European regulations because of the lack of training.

VETAAL consortium have recognised that problem and they are working to solve this issue with VETAAL project with the support from the European Commission in the life learning programme sub-programme Leonardo. Their target is to develop a novel curriculum and innovative training material to actual and future furniture professionals in design and manufacturing of AAL furniture for elderly and disabled people with a pilot test to ensure the quality and assessment of the material.

The consortium is working now in the development of the training courses divided in four pillars: Basic Concepts on Electronics, Design and Ergonomics, Psychology and Needs of Elderly and Disabled and AAL Integration in Furniture. But for that it had been necessarily the previous steps like a deep desk research, experts committees and questionnaire to determine the skills, knowledge and competence needs in different job positions (blue collar worker, designer, manager and freshman) that the partners have done in their different countries. This task was aimed at identifying the main needs and requirements in participating countries regarding concepts of the learning pillars applied to the Furniture Sector. For that, the methodology the consortium has used for the first steps of the project had involved heterogeneous workers in order to gather information.

These studies mapped all learning outcomes professional needs to acquire in order to cope with the current situation with a qualification profile for partners respective country. Besides their different needs, the research found that the workers have different backgrounds and for that it might be a waste time to repeat some units, therefore, the partners thought about a way to individualize the training paths with previous questions before each unit as well as their job position path.

The consortium is composed by 10 partners from 6 different countries (Austria, Italy, United Kingdom, Spain, Slovenia and Poland) covering a big European area and with an appropriate geographical balance, moreover the partners have complementary expertise about furniture, training and management because some partners are Technical Research Centres, Development Agencies, Chambers of Commerce and Industry, e-learning provider experts, Institutes for Vocational Education and Training, Universities or Quality Assurances. The whole consortium assures high volume cooperation between bodies and a big network for disseminating the results of the project and providing learning opportunities all over Europe.

This project has an own website (<http://www.vetaal.eu>) with a public area (which constitute the main platform for dissemination activities and contain all public information of the

project) and a private area (which be used as file exchange repository and internal communications tool).

When the different contents had been developed by the partners and the platform had been released, a learning pilot test will be implemented to assess these outcomes, the pilot could start in early March or April in Spain, Slovenia and Poland.

VETAAL will benefit the overall European society by training the furniture industry to have more qualified workers in AAL and by providing tools for the aging and disability population sustainability.

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1. Project Objectives

The main objective of VETAAL is to address the challenges of the vocational skill mismatch that the new demand of an AAL-integrated Habitat has produced, by the development and validation of a harmonised European curriculum based on the principles of ECVET in the area of design and manufacture of *Smart Support Furniture for Ambient Assisted Living* that integrates e-learning and face-to-face learning to the benefit of experts from the furniture sector or preparing to enter the labour market.

That is because, currently, the care and support of elderly and disabled people is an emerging market for the furniture sector. Nowadays more and more furniture organizations are focusing on this market even integrating AAL (Ambient Assisted Living) systems in their final products producing what is called *Smart Support Furniture for Ambient Assisted Living*. However, it has been found that most of the furniture organizations do not have a skilled staff for designing and manufacturing products for this sector according to the specific safety and mechanical needs (CE marked, ISO Standards, etc) that these products must satisfy in order to fulfil legal and safety European regulations.

VETAAL has the objective of removing definitely the existing lack of knowledge and skills between professionals in the furniture industry related to Ambient Assisted Living and their application in designing and manufacturing of *Smart Support Furniture for Ambient Assisted Living*. VETAAL could allow furniture companies to reinvent themselves in order to satisfy the needs of an ageing population, by introducing AAL technologies with suitable professionals. The competitiveness of the sector could be increased and new enterprises could be created. Moreover, generally, the furniture industry is considered as low-tech, labour-intensive sector, and this project could increase the employability of the workers, considering the AAL market is increasing steadily and there is a lack of qualified personnel

Moreover, VETAAL reinforces the European policy by the delivery a Joint Curriculum in AAL for the furniture sector for addressing the challenges of vocational skills mismatches. The close cooperation of six EU countries will ensure that all outputs are widespread and the trans European cooperation. The whole consortium will assure high volume cooperation between bodies and a big network for disseminating the results of the project and providing learning opportunities all over Europe.

In order to accomplish these broad objectives, the specific objectives of the VETAAL project are:

- **Define skills needs** in the field of AAL and requirements for designing and manufacturing *Smart Support Furniture for Ambient Assisted Living*.
- **Design and develop a Joint Curriculum** on *Smart Support Furniture for Ambient Assisted Living* by implementing innovative methods in e-learning and face-to-face learning.
- **Develop a Multilingual eLearning Platform** for teaching the remote learning part.

- **Involve VET policy makers** contributing to the outcome dissemination to guidance services, representative organisations as well as to relevant national, regional or local authorities, exploiting the project outcomes and recognizing it as a standard VET model, which will ensure a high impact on VET policies.

- **Develop a Memorandum of Understanding:** Defining criteria for memorandum of understanding and recognition of learning outcomes and concluding a MoU to shape future operational partnerships between partners.

- **Develop Draft training recommendations** that can be adopted by training institutions in all European countries

These objectives will impact directly to furniture workers and furniture enterprises, and, in addition, elderly people and people with some disability will be benefited because this kind of furniture could improve their quality life.

2. Project Approach

VETAAL had finished two important phases where the analysis of the furniture field, their workers and their needs was really important. Moreover, the definition of the different training paths and the student project contents were done by the partners in the second phase and the methodology for the different units like e-learning, face-to-face or hands-on sessions.

During this phases the partners was in permanent contact but they had their task distributed according their expertise and background. In the first steps it was necessary to know deeply the real situation in furniture field in relation of *Smart Support Furniture* for defining vocational skills, knowledge and competence mismatches between the different job positions inside the professionals of the furniture.

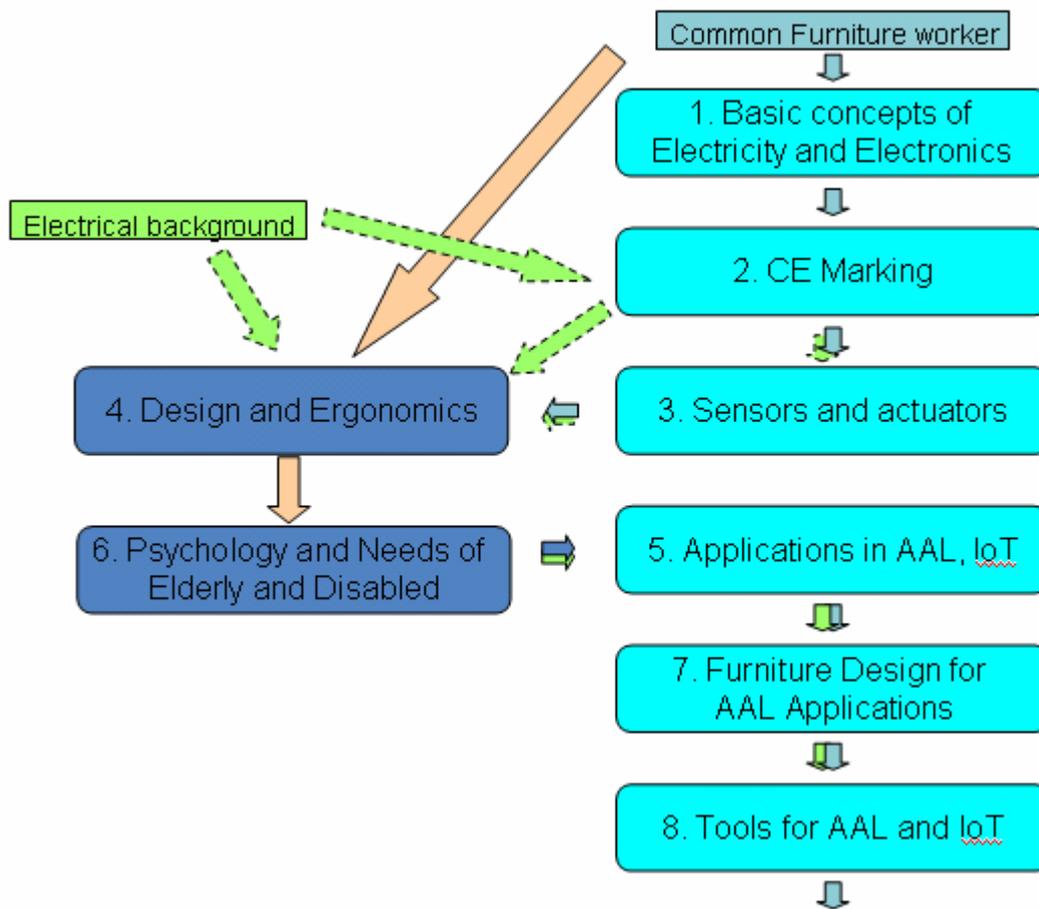
For these purpose, partners have formed expert groups in Slovenia, Poland and Spain with experts, individuals from furniture production companies, individuals who work with elderly people... These expert groups helped the partners to prepare suitable questions to make a questionnaire and to plan and undertake a good desk research.

In relation with this, pillar responsible partners prepared questions to make the questionnaire but the final selection was made by the partner in charge and they send the questionnaire to the professionals from the furniture companies to define the vocational skills mismatches.

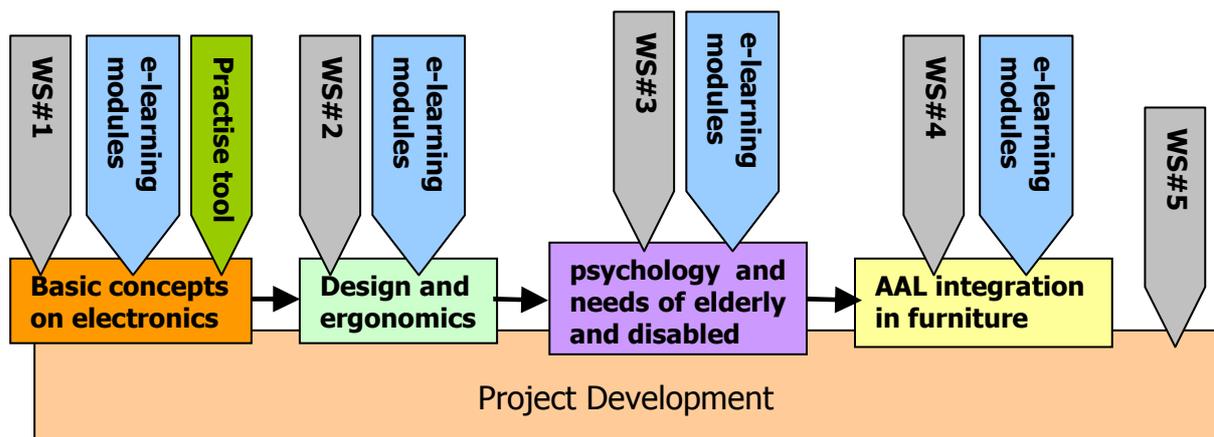
Moreover, each project partner carried out a desk research analysis extracting the learning outcomes needed: Knowledge, skills and competences with the same methodology according to the guideline that the task leader had sent to the consortium.

Partnership took into account that they needed the broadest information about the sector and their needs. With this information the different partners could design some learning's framework dividing in four big pillars: Basic Concepts on Electronics, Design and Ergonomics, Psychology and Needs of Elderly and Disabled and AAL Integration in Furniture. But, not only this, because each worker is different and he has different background and needs, partners has develop different training paths (picture below -1) and possibilities (exam previous the units). Each partner was focuses on the definition of the unit contents that are closely related to its expertise, as well as the analysis of the best form of training for every unit.

Now, the partners are developing the different units' content in English to subsequently translate it to the partners' language. Each learning pillar will comprise several units and a workshop to be delivered at the beginning of each module for addressing questions regarding the module before introducing the current learning (picture below -2)



Training paths – picture 1



Training course – picture 2

Finally, it is really important to prove and to assess that the produced contents are the suitable ones and three pilot tests with real workers will be implemented in Spain, Slovenia and Poland to get information in order to review and improve these contents.

Moving on to other issues, Quality assurance (QA) is an integral part of the internal management in VETAAL project and a “Quality and risk plan” was developed at the beginning of the project to ensure its perfect development, moreover, one partner is constantly attentive to every task that the partners are doing.

Dissemination and exploitation strategy are ensuring the valorisation of VETAAL results and are building together a process with a view to optimising the project value. **The dissemination and exploitation strategy are tailoring to each target audience.** In order to have a wider audience and exploitation, the following activities are being carried or it will be carried out:

- **Mass media communication:** Website translated into the languages of the partnership, e-Newsletters, leaflet and promotional material, press releases, radio and TV.
- **Social Media tools** such as Twitter, Facebook, LoopThing etc.
- Project registered in the **ADAM portal**
- Organization of **Workshops and seminars** tailored to each target group

3. Project Outcomes & Results

VETAAL project has achieved the first two specific objectives with a really intensive research during the first steps of the project. It was needed because it is really important to know what the needs are inside the field and the requirements for designing and manufacturing Smart Support Furniture for Ambient Assisted Living.

Some projects have failed in similar objectives because the partners had started to work before to know what the needs are. Moreover this project has analysed the vocational skills mismatches and with this information the partners have developed the different profiles about blue collar, designer and manager.

These are one of the important outcomes of the project, and related with this, the consortium had to determine the skills, knowledge and competence needs (learning outcomes) regarding concepts of VETAAL learning pillars applied to the furniture sector project and because that the consortium have developed and used some research methodology with experts group in Slovenia, Poland and Spain with different backgrounds (individuals from furniture production companies, individuals who work with elderly people, experts for electronics and domestics for AAL, designers for AAL and experts for setting up qualification profiles), questionnaires used with the professionals from the furniture companies to define the vocational skills mismatches and desk research to define what companies have to know about AAL. Later of this the partners did “qualification profiles”, these qualifications will map all learning outcomes professional need to acquire in order to cope with the current situation; they should focus the qualification profile in the European Framework.

With this information the partners had defined the possible Training Path and the Learning Content. The paths was designed in terms of the necessary areas of knowledge and optimized to fit the variety of job profiles by providing a core training path, as well as elective training modules to address the specific needs of certain job profiles. Taking into account that, the partners broke down VETAAL learning pillars into smaller and more manageable *training units*.

The design of the training was done by the partners with the important aim that every worker could have their own training path to achieve their needs depending on their background and previous knowledge and skills, looking for this objective, four big training paths had been developed by the partners (blue collar worker, designer, manager and freshman) but with the possibility to customize each training path with the necessity of each worker. For that, inside the pillars, each one of this four training paths has their way with different units to achieve their needs. Finally the consortium has a complete program to train *European Furniture Experts in Designing and Manufacturing of AAL Integrated Furniture for the Care and Support of Elderly and Disabled People*. This program could be official in the future because it accomplishes every needs detecting in the field. Besides that, each unit has smaller units and the best form of training for every unit (face to face, on-line, slides, video, etc. or a mixture of some).

Finally each partner are taking care of the units closest to its expertise in development of the actual training material, and now some units inside the first pillar

“Basic Concepts on Electronics” have been developed and send it to the partner who is developing the e-learning platform.

The consortium has one “Quality and Risk plan” developed for one partner for the project, this plan was analysed again during the third meeting in Austria to improve it and to check that everyone was doing their tasks correctly.

This consortium is showing a permanent contact between their partners not only in the official meetings because this project needs that level of agreement between the partners. Related with this, partners are doing permanent dissemination inside their countries about the development of this project and they have one newsletter about this project. Moreover some articles in professional journals like CIC with the article “Diseño de mobiliario específico para ancianos y personas discapacitadas” were published. One website has been used for promote this project: www.vetaal.eu , it has a public area (which it has the objectives, methodology, consortium, news and possibility for being in contact with the partners) and a private area (which is used as file exchange repository and internal communications tool).

4. Partnerships

VETAAL was very careful to choose the right partners in order to develop the most useful partnership because for this project is really important the collaboration between different kinds of organisation with variant backgrounds. In fact, the project consortium consists on EU experts that cover different fields: VET providers, employees and enterprises representatives from the furniture sector and VET policy makers, actually, the whole consortium will assure high volume cooperation between bodies and a big network for disseminating the results of the project and providing learning opportunities all over Europe.

Alliance's geographical diversification ensures the European Perspective, since it is composed by 6 countries: Spain, Poland, Slovenia, United Kingdom, Italy and Austria. The close cooperation of these six EU countries ensures that all outputs are widespread. It is composed by 10 partners which origin is geographically balanced and has the guarantee for the successful dissemination and exploitation of the project results. Specifically, partners come from 3 complementary fields:

1. The world of work: CETEM (Technical Research Centre of Furniture and Wood of The Region of Murcia), CCIS (Wood Processing and Furniture Association), CONFEMADERA (Confederación Española de Empresarios de la Madera) and OIGPM (Polish Chamber of Commerce of Furniture Manufacturers), as they are in direct contact with furniture industries and relevant stakeholders, they have the expertise for skill needs analysis and they play an important role during dissemination, exploitation and pilot test activities.
2. The world of VET: WTD (Warsaw University of Life Sciences, Faculty of Wood Technology) and UNIVIE (University of Vienna, Institute for Applied Psychology) are familiar with the joint curriculum design and delivery, on the other hand, VITECO (Vitale Tecnologie Comunicazione) is developing the e-learning platform. SEARCHLIGHTER participates exclusively by assuring that the project results and its development comply with the expected quality.
3. VET policy Makers. A development office (INFO - Instituto de Fomento de la Región de Murcia) and a body responsible for systems and VET policies at local, regional and national level (NIVET - Institute of the Republic of Slovenia for Vocational Education and Training) are involving in the contribution of the outcome dissemination to guidance services, representative organisations as well as to relevant national, regional or local authorities, exploiting the project outcomes and recognizing it as a standard VET model, which will ensure a high impact on VET policies.

Moreover, the added value of European Cooperation in terms of learning is justified, since VETAAL platform will connect experts and students from the furniture sector. Users are having the chance of sharing information, knowledge and experiences with other EU users. VETAAL will also become the first step for collaborations, which is aligned with the purposes of the EC: an approach to enhance the EU cooperation in AAL and its correct integration in the furniture sector.

All partners have experience in project management, workgroup coordination, and organisation of national and international events, as well of networking. Several partners have also worked together in previous projects. During this project there are an active collaboration and good understanding and practise to task sharing between them.

For the partners involved, the benefit is the Knowledge and skills acquisition related to applying them in their product and manufacturing process.

VETAAL partners have been chosen on the basis of:

- » Previous experience with multinational projects.
- » Harmonised and complementary competences and background in **technological knowledge, pedagogical skills and capabilities in the field of AAL and its integration in furniture, design, ergonomics and Psychology and Needs of Elderly and Disabled**

Furthermore, all partners have a high level of implication in the furniture sector. Additionally, VET providers and Associations have either experience in electronics, AAL and its integration in furniture, design, ergonomics and Psychology and needs of the elderly and disabled. Partners, such as CETEM, CCIS, OIGPM, INFO and NIVET enjoy excellent relations to regional or national authorities in charge of education and work, which forms an excellent basis for mainstreaming the project results at political level. The involved partners are representatives of the major target groups that this project proposes to provide a solution to the threats and concerns to which they are subject.

5. Plans for the Future

The project is developing satisfactorily but with a bit accumulated delay during the first steps of the project. Because that the deadlines of the different tasks are fixed by the coordination in order to recover the original schedule.

Currently, the partners are developing in parallel two important phases:

- Training Courses Development: in terms of four learning pillars: Basic Concepts on Electronics, Design and Ergonomics, Psychology and Needs of Elderly and Disabled and AAL Integration in Furniture. This content is being done by the partners with the division of different training paths according workers background and their job position (blue collar worker, designer, manager and freshman). Finally the consortium will have all the training materials necessary to teach the course. Each of the training units will have the associated material for e-learning, face-to-face or hands-on sessions. It can include different types of formats slides, hands-on training sessions, bibliographic material and tests. The whole material will be in English, Spanish, Slovenian and Polish.

- Platform Set up and Test: this task has several activities like elaboration of functional and non-functional specifications; architectural design of the platform; customization of the contents; SCORM and Upload contents objects to the platform; testing and improving the platform. These activities and make a guideline on how to use e-Learning Platform is being done by VITECO as e-learning platform expert.

Later when these phases were finished and the partners could check the different contents and the platform, a pilot test to analyse the contents will be implemented in Spain, Slovenia and Poland. In order for this analysis it will be defined a Key Performance Indicators by the partners.

In this pilot, testers from Spain, Slovenia and Poland will be trained on *Design and Manufacturing of Smart Support Furniture* following the learning methodology developed in the project and using the e-learning platform. Partners' staff will coach and lecture, provide training and support, provide activities, assess learners and issue certificates for the testers. The units will be distributed in 4 modules in consistency with the 4 pillars and with a previous Workshop before each module for summarizing and solving questions about the training material.

At the midpoint an assessment will be done to taste how it is going and at the end of the project an evaluation will be done by interviewing learners and partners' staff, and reviewing relevant documentation. Moreover, learner surveys will be performed at the end. The *Pilot Test KPIs* will be reviewed by each partner.

Finally the inputs received in learning evaluation will be used to improve the quality of each of the project outcomes. Each partner will improve the outcomes they are responsible for and it will be analyzed for the whole consortium. This final result will be better than the previous versions.

Changing the subject, in the next months the partners will develop and implement tools and procedures for:

- Planning for the future sustainability of results, based on the commercialization of it to the European R&D transfer industry. Furthermore, must consider the synergies between partners' activities and between these and the results and activities of the project.
- Protection of Intellectual Property produced under VETAAL project, that states all the rules to ensure intellectual property rights of the several authors that may collaborate in the production of results and avoid future commercial exploitation of results based on the free work of the partnership
- Identification of possible entities for transfer of knowledge and/or development of new projects and identification of new funding schemes for further transfer of knowledge and development of innovation over the achieved results

The project results will be reported in journals and on professional and social network forums. The consortium will continue reporting the on-going activities and intermediate results on periodic news-letters, magazines, websites and events.

6. Contribution to EU policies

The **Programme for EU Action in the Field of Lifelong Learning** (the Lifelong Learning Programme – LLP) aims to contribute through lifelong learning to the development of the EU as an advanced knowledge society, with sustainable economic development, more and better jobs and greater social cohesion. This project addressed clearly this objective because it is aimed to improve some jobs with the appropriate training in order to improve the knowledge and skills of furniture workers, besides that the workers will improve their employability and with better resources and emerging market the competitiveness of the sector could be increased.

VETAAL contributes to achieve some specific objectives of LLP as:

- To contribute to the development of quality lifelong learning and to promote high performance, innovation and a European dimension in systems and practices in the field. It is because VETAAL reinforces this policy by the delivery a Joint Curriculum in AAL for the furniture sector for addressing the challenges of vocational skills mismatches. Furthermore AAL is an innovative approach for furniture companies to be more competitive in the market and satisfying the needs of an aging population. The close cooperation of six EU countries (Austria, Italia, United Kingdom, Spain, Slovenia and Poland) will ensure that all outputs are widespread and the European cooperation.

- To help promote creativity, competitiveness, employability and the growth of an entrepreneurial spirit. Ambient Assisted Living is one of the main innovative technologies that will allow us to live at home longer despite cognitive or physical impediments. VETAAL will allow furniture companies to reinvent themselves in order to satisfy the needs of an ageing population, by introducing AAL technologies. This will increase the competitiveness of the sector and the creation of new enterprises: AAL market is a very promising market for the furniture sector and will generate in 2015 €525.56 million.

- To support the development of innovative ICT-based content, services, pedagogies and practices for Lifelong Learning. VETAAL comprises the architectural design for the customisation of one OSS platform. This platform have to be accessible by all and represent a tool to implement e-learning classes.

VETAAL addresses two Leonardo specific objectives:

- To support participants in training and further training activities in the acquisition and the use of knowledge, skills and qualifications to facilitate personal development, employability and participation in the European labour market. The novel profile will also increase the employability, considering the AAL market is growing steadily and there is a lack of qualified personnel, and they could work safely.

- To support improvements in quality and innovation in vocational education and training systems, institutions and practices. VETAAL is a new way to train furniture workers because they could have their own training path and pace because they will use e-learning methodology and the units could be learnt in home.

Moreover VETAAL addresses two operational objectives at least:

- To improve the quality and to increase the volume of co-operation between institutions or organisations providing learning opportunities, enterprises, social partners and other relevant bodies throughout Europe. The project consortium consists on EU experts that cover different fields: VET providers, employees and enterprises representatives from the furniture sector and VET policy makers, the whole consortium will assure high volume cooperation between bodies and a big network for disseminating the results of the project and providing learning opportunities all over Europe.

- To improve the transparency and recognition of qualifications and competences, including those acquired through non-formal and informal learning. With VETAAL the enterprises could know which profile may have their workers in this specific field and the workers could get the knowledge and skills needed in AAL.

VETAAL also contributes to furthering the horizontal policies of the EU, in particular by LLP Horizontal policies:

- Promoting equality between men and women and contributing to combating all forms of discrimination based on sex, racial or ethnic origin, religion or belief, disability, age or sexual orientation. VETAAL does not allow carrying out any type of discrimination based on sex, racial or ethnic origin, religion or belief. The only information the Web-based system manages is related to the job profile and competences, without any other sensitive data or confidential being published. Moreover, it promotes active involvement of older workers in training and sharing activities, because they are the most experienced individuals, and therefore can contribute more than others sharing knowledge.

VETAAL demonstrates complementarily with other policies like Education and Training 2020 Work Programme because it enhances creativity and innovation by implementing the training path in electronics, ambient assisted living and its furniture implementation, in the sense it promotes new ways and methods for the design and manufacturing accessible furniture for people at risk of exclusion. Furthermore the project enhances entrepreneurship because addresses directly the lack of staff with the right qualifications when designing and manufacturing those products.

7. Extra Heading/Section

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