



## **EUEXNet**

Progress Report

Public Part

## Project information

Project acronym: EUEXNet  
Project title: European Explosives Network  
Project number: 803572-LLP-1-2009-1-SE-Leonardo-LNW  
Sub-programme or KA: Thematic networks  
Project website: [www.euexcert.org](http://www.euexcert.org)

Reporting period: From 2009-11-01  
To 2010-10-31

Report version: 1  
Date of preparation: 2010-12-17

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This project has been funded with support from the European Commission.

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# Executive Summary

Safe handling of explosives is necessary to build a sustainable, competitive and modern society. Therefore it is necessary to develop conditions where education and training for specialists in the sector accept the fact that safe and competitive handling is based on tacit skills, experience and knowledge developed during hundreds of years of craftsmanship combined with academic knowledge. The outcomes of the project will influence everyone in the explosives sector i.e. workers, education providers, companies and authorities.

The EUExNet project aims to develop a systematic approach, at European level, for bridging the gap between the demand of education and training for the workers in the European explosives sector and the supply of training. This has been possible by working trans-national and by using a European dimension. In that way a trans-national cluster/network is formed.

The EUExNet project has used mapping as one method to develop knowledge about the sector specific characteristics.

The EUExNet project is building on the ideas of realizing the European Union's idea and targets of lifelong learning and developing a European Qualification Framework (EQF) and according to the 2020 strategy, the idea of developing a system for adult education and vocational education and training.

The activities in and the outcomes of the project can be summarized as follows:

- Two project meetings (Sweden and Italy)
- Four newsletters
- One project website/blog and a large number of national websites
- Presentation of the project at conferences, seminars, national and international meetings
- Developing of study material
- Mapping of the explosives sector
- Setting up national nodes
- Planning of certification procedure

The project got representatives from companies, universities and organizations representing 10 European countries and one European organization. Representatives from another three countries have become associated partners.

In 2011 a European association for education and training will be set up. The association will be a base to sustain a safe and competitive industry.

The activities and outcomes of the project can be followed on the projects website, [www.euexcert.org](http://www.euexcert.org). On the website it is possible to sign up for the newsletters.

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# 1. Project Objectives

Safe handling of explosives is necessary to build a sustainable, competitive and modern society. Therefore it is necessary to develop conditions where education and training for specialists in the sector accept the fact that safe and competitive handling is based on tacit skills, experience and knowledge developed during hundreds of years of craftsmanship combined with academic knowledge. In addition the European explosives sector must sustain and develop a competitive advantage through the means of a skilled workforce and handling explosives in a safe way and without accidents. Mistakes and mishaps can cause accidents of catastrophic proportions. Accidents are often due to the lack of knowledge, experience, skills and competence. The EUExNet project aims to develop a systematic approach, at European level, for bridging the gap between the demand of education and training for the workers in the European explosives sector and the supply of training. This has been possible by working trans-national and by using a European dimension. In that way a trans-national cluster/network is formed.

After conducting two previous European projects within the framework of lifelong learning, the project partners have mapped existing education and training and assessed the needs for competence development among workers, within the previous partners' countries. The mapping revealed that there is a huge need to develop a systematic approach to competence development, education and training for workers in the European Explosives sector. The EUExNet therefore targets four levels of actors

- Stakeholders in the European explosives sector
- Education providers
- Legislators and
- Workers

EUExNet has the ambition to highlight the need of developing a systematic approach for competence development, education and training and to offer a methodical approach to how to bridge the gap between demand and supply.

By developing a system where a European framework for competencies can be enacted, it is possible to ensure that,

- Workers have necessary level of competencies in order to carry out their duties in a safe work environment and by using safe practice
- The status of work in the sector is recognised and improved
- By engaging strategic stakeholders into the development work it is possible to ensure that control systems for work safety and risk assessment are developed according to relevant knowledge
- Through safe work practice and knowledgeable workers the European explosive sector can sustain their competitive edge on the global market

The need to develop workers skills and competences within the European explosive sector is huge, partly because many workers have retired and many more are about to retire. When experienced and skilled workers retire they drain the sector of valuable, experience, knowledge and skills. When workers skills and competencies are diluted, there is alarmingly higher risk that work procedures and practice will be affected and consequently lead to an increase of accidents. When accidents occur, it affect workers, companies and people in the near area and sometimes even whole communities. This risk can be avoided if workers are provided with opportunities for education and training, and when education and training needs are planned and assessed through the means of a systematic approach, and provided in a systematic manner. This systematic approach thus avoids haphazard or ad-hoc solutions to immediate training needs. By transnational collaboration and by creating a European association for education and training within the explosives sector the EUExNet project will develop a sustainable organisation and network for promoting the importance of education and training for workers in the explosives sector. By developing a European framework for competencies it is possible to develop a standard for education and training for workers in the European explosives sector and

ensure that workers have employable skills in the sector which will make all workers more flexible on the European labour market.

## 2. Project Approach

The EUExNet project has used mapping as one method to develop knowledge about the sector specific characteristics. Since the beginning of the first EUExcert project, old and new project partners have mapped several factors such as: fragmentation of the sector due to global competition, existing education and training, the scope and type of the sector in each partner nation, the demographic situation in each partner country and the legislation which regulates education and training in each country. This means that each new partner starts the work in the project by carrying out the same mapping exercise.

We have also used experience derived from best practice related to planning and executing education and training within the explosive sector – this by building the European framework for competencies on the UK occupational standards.

The EUExNet project has also developed new knowledge about the gap between the demand and supply of education and training. Skills and competencies within the European explosives sector is based on (life) long experience, which means that knowledge and skills are tacit, which makes it even more difficult to transfer from one person to another. In addition the EUExcert and EUExNet projects have developed and continue to improve a glossary for the sector.

In the EUExNet project we are about to try out if and how the European framework for competencies can be realized, this by testing how existing education and training, which is provided by a private company, can be used to certify outcomes from training according to the occupational standards used in the project. The starting point in these tests is the practice of in-house education and training.

In addition the EUExNet is testing if the system for vocational, education and training in each partner country has been adapted according to the European Qualification Framework, as this change will support the ideas developed within the EUExcert and EUExNet.

However due to the rapid change of owner structures in companies and the ongoing privatization of public services, has created a new situation in the system of education and training in each partner country, which requires that European countries take advantage of transnational cooperation, in order to increase company competitiveness.

In order to disseminate the work in the EUExNet project and to develop awareness around the issues promoted in EUExNet, each partner has developed a national node in their country, with the task to promote knowledge and a systematic approach towards education and training for workers in the European explosives sector. The national node is also responsible for promoting knowledge and to be the lobby organization for these matters in their country and to be the national partner in transnational collaboration. In order to be successful in promoting the issues in EUExNet – information must be available in each partner country's language.

The national nodes are expected to take on the role as speaking partner and to provide an arena for issues related to creating sustainable conditions for the sectors companies and employees.

The partners have disseminated knowledge, experience and news to national stakeholders and to an international audience through participation in national and international conferences, through publications in their own language and through publications on the project website in English and in their national language, and through newspaper articles, regular newsletter to 500 subscribers and by the blogspot, and social media. The euexcert.org website has about 500 visitors per week.

EUExcert has 2240 hits on google and EUExNet has 2050 hits on google. Each partner has set up a national website which can be linked through euexcert.org

The EUExcert and EUExNet have achieved a huge international interest in the issues promoted by the project.

The project partners have taken part in a variation of activities, such as project meetings, meetings with national stakeholders, tests, writing papers and other texts and lobbying activities. The EUExcert logo is recognized as an international trademark for education and training for workers in the explosives sector.

The EUExNet will continue to exploit the trade mark and continue the efforts to develop the European association as a means to develop a sustainable organization for education and training within the explosives sector. The EUExNet /EUExcert -European association will strive to become the European body who can license national awarding bodies.

The EUExNet project will add value to the system of education and training as there will be a European standard for competencies for all workers in the explosives sector. This means that all workers will have, when certified, transferable competencies on the European labour market, which will increase the mobility of workers.

Voices from project partner UK - IExpE

Partners have made personal approaches to organizations within the explosives sector in their country. These organizations have included research, regulatory bodies, law-enforcement agencies, manufacturers, and logistics companies, users of explosives, training providers and disposal specialists. Because the legislation and regulation of the explosives industry varies widely between partner nations, this approach has been found to be the most effective. Some partners have had to start from creating an environment in which a legislative framework can be built and, in parallel, also develop the political and commercial will amongst their explosives community to accept the need for vocational training and qualifications built on recognized standards. This approach has had the added value of highlighting the Europe- and World-wide reduction of the workforce in the explosives industry, which therefore emphasizes the need for enhanced mobility of explosives workers through the intended acceptance of common Occupational Standards and recognition of vocational qualifications. Partners have written papers and made presentations to their national industry bodies with the intention of heightening awareness of the issues behind the need for EUExNet and therefore the need for incorporation of bodies into the EUExcert Association through EUExNet.

The measure of success for WP4 is therefore the incorporation of partner nations into the EUExNet within the timeframe of the project. The UK explosives sector has long had its SSB [Standards Setting Body (for National Occupational Standards in Explosive Substances and Articles)], which has agreed that the Institute of Explosives Engineers (IExpE) will host the UK National Node. This existing body has a well established network of interested parties communicating by email and this will be the basis of the UK's National Node Reference Group. Personal approaches to companies within the explosives sector (manufacturers and end-users) has been conducted by LEDAP and University of Pardubice partners in order to evaluate the qualifications of the employers and the accreditation procedure valid to certify their competencies. UK national occupational standards for explosives sector has been adopted to be used as model. This process has been conducted by both partners in cooperation. The approach to manufacturers and end-users to evaluate their qualifications and recognizing their competences has been identified as the most effective taking into account that already exists references about that subject in the legislation of both countries of the partner.

Partners have written papers in the journals of companies and professional societies and performed presentations in national and international conferences and also to working groups where national societies and authorities are represented, explaining the aim of EUExNet project and the importance of establishing an EU body to certificate individual competencies based in simple and transparent methods and large enough to include education, vocation training and workplace skills, that allows individuals be able to opt for a variety of modules in different countries in order to gain a qualification to be recognised from one country to another or from one subsector to another. The success for WP5 will be measured by the acceptance of the system assessment. It should allow the mutual recognition of qualifications enables the portability of qualifications and credit between states and territories. Companies in this sector are expected to have more transnational activity and employees are pushed to

work in several countries. An EU regulated body and a recognized model to certify competencies will promote the mobility of workers in this sector contributing for a more competitive sector in Europe.

### 3. Project Outcomes & Results

WP 1; The project management team organized and hosted the first project meeting in Karlskoga Sweden, in March 2010. Before the project meeting a seminar was held to present the state of the art of education and training in each partner country.

WP 1; The project management team planned the second project meeting in Lonato Italy in September/October 2010, which was hosted by NITREX.

WP 1; The project management team have engaged three new associated partners (Finland, Slovakia and Lithuania) and two additional partners are in process to become associated partners.

WP 2; Four newsletters have been produced and distributed to more than 500 subscribers, which then are spread to a worldwide audience.

WP 2; The project management team have set up a blog for the project, and the Estonia partner have tested a few different social medias for the project and set up LinkedIn as the media for the project.

WP 2; All partners have disseminated project results and outcomes, provided to the project management team as material for newsletters and

WP 2; Almost all partners have set up a national websites with information about the project,

WP 2; All partners have contributed with information for the project website [www.euecert.org](http://www.euecert.org).

WP 2; Some partners have disseminated project results and outcomes at national and international meetings, seminars and conferences by presenting papers.

WP 2; The Italian partner, NITREX, have developed study materials to be used for education and training in Italy. There is an ongoing discussion about translating study materials which have been developed in Italy to other partner countries languages. NITREX has produced five books during the previous two EUExcert projects.

WP 3; The internal monitoring process has produced one survey and one progress report. All partners have contributed to the internal monitoring procedure by responding to surveys and progress reports from QA/QC responsible partner. Results from the quality assessment has been discussed at the second project meeting and it show that all partners are determined to continue the work.

WP 4: Almost all partners have set up national nodes, and elected a chair person for the node.

WP 5; The partners involved in the work package to test a certifying procedure, have been planning the work and the testing procedure will take place before the end of the year 2010.

WP 6; The project partners have used the EUExNet and EUExcert logo and signed the Memorandum of Understanding (MOU). The project partners have decided to set up an interim board for the European association at the third project meeting in Latvia in April 2011.

#### Voices from project partner Italy - Nitrex

Nitrex is a company working in the explosive field. Its main target is to disseminate EUExNet project and its name and program and to let as much people as possible know about it, this as the company is not part of the educational sector. As the project policy requires, it implemented its web site with the information concerning EUExNet and its partner and created an Italian EUExNet Node. Nitrex have published a booklet for the pyrotechnical sector, were it was decided to use the EUExcert logo, in order to give the stakeholders a sense of continuity (this is the 6<sup>th</sup> booklet of the Italian EUExcert series). Being in the explosive sector, we are trying to involve experienced and skilled people, to write down their experience and knowledge to be shared with the new generations. The booklets are free to authorities and to people in the sector in order to disseminate the EUExcert logo and name and to ensure that education materials produced by Nitrex are linked to high quality educational manuals. In

the second phase of the project Nitrex will focus on producing short articles and newsletter thanks to the collaboration of a dedicated free lance journalist specialized in the construction branch.

The following partners have set up website in their own language;

- Estonia, UK, Italy, Czech Republic, Latvia, Norway, Portugal, Ireland and Sweden

## 4. Partnerships

Sweden – KCEM. The Project management team is very glad to lead the EUExNet-project with very qualified partner in this European and transnational cooperation. The project clearly demonstrates the advantage of European cooperation and how it links to goals described in the European Union's strategy 2020.

The project shows the importance of creating transnational cooperation through the means of EU-funded projects for all member states, however transnational cooperation is even more important for small member states as the explosives sector is small but very important, and through the EUExNet-project these small nations are provided with access to knowledge, experiences and cost effective solutions for future training needs. (When referring to small nations, we mean member states with just a couple of million inhabitants).

The project also creates opportunities for former member states of the Soviet Union to meet practitioners and experts in the field of explosives from West European countries, as both sides have plenty to learn from each other. The partnership also creates new possibilities for member states to engage in mobility projects addressing both education and training.

Setting up national nodes in each partner nation is a fundamental starting point for creating a sustainable network for first class education and training for specialists in the European explosives sector. These national nodes also make up a basic organization for expertise in the field in each nation. Through the partnership it is possible to ensure that developmental work aiming to develop or adapt the system for education and training, in the fields of explosives, will be possible to implement and not include any weak links. By this we mean that the partnership includes representatives from all strategic partners and actors who can or should be involved in the developmental work. Altogether the partnership has representatives from following organizations: explosives sector, vocational education and training, universities, practitioners in the field, experienced workers, Police, defense forces, environmental specialist, other end-users, and regulators.

Voices from UK - IExpE partner Work Package 4 leader. (Development of national EUExcert nodes/bodies.)

It has been of great benefit being part of a multi-national partnership in many ways. The principal way has been in seeing and understanding that the issues of a declining industry and ageing workforce are having an impact on the whole of Europe and the rest of the world. All partners have recognised that the fragmentation of the industry has the potential to lead to increased accident rates as the experience and knowledge of the existing workforce retires and the limited numbers of new personnel, into niche areas of working, without broad understanding of the reasons for existing and new explosives safety legislation and control measures, can then lead to them taking shortcuts in the name of increased efficiency.

Within the project, it has been very useful to see and understand other partners' ways of working: their legislative processes, licensing and training regimes and the solutions they have proposed and implemented to overcome issues. As well as the formal, legislative and regulatory views, it has been extremely useful to see, and then take into our own use, practical use of tools for internet working which may otherwise not have been obvious as a sensible solution for the creation of the network. The UK set up its SSB some ten years ago and this partnership of members from different elements of the UK Explosives sector has proven to be very useful in disseminating the concepts of EUExcert and will be utilized to expand the EUExcert UK association to other potential partners, strengthening the wider EUExcert Association.

Voices from Portugal - LEDAP Work Package 5 leader. (Issuing of EUExcert certificates based on accreditation of individual competencies)

The great benefit of a multi-country partnership in the executing project is the sharing and comparison of legislative and practices procedures regarding qualification and certification of individual competencies in each country and the discussion with a large spectrum of experts and countries to look for a realistic proposal.

When common objectives are identified, the cooperation allows increase the number of experts and take advantage from the experience of each partners. Sharing results and work in cooperation based in a well defined matrix for each task covering all WP's allows us to achieve the objectives in less time and with lower cost. With internet and video conference facilities the distance is no more a reason to confine cooperation only to close countries. Despite the barriers of the language the cooperation on specific subject can be achieved with success.

## 5. Plans for the Future

The project partners aim to deliver their parts in respective work package according to plan.

WP 1; The project management team will deliver a progress report and a final report to EU according to agreement.

WP 1; The project management team will plan the contents for the two remaining project meetings, which will be hosted by the University of Latvia and LEDAP in Portugal.

WP 1; The project partner has advised the project management team to put in a new bid to the EU, for an project extension as the work in the partnership is estimated to require financial support until 2015, when the framework for competencies and the certifying procedures and the European association and its licensing body will be in place.

WP 1; The project management team and project partners will increase their efforts to engage additional partners to the consortium.

WP 2; All partners will be involved in disseminating project results and outcomes all through the project period, this means that they will provide the project management team material for the newsletters and update their national websites with information about the project, and provide the project management team with material that can be presented on the project website [www.euecert.org](http://www.euecert.org).

WP 2; All partners will be involved in disseminating project results and outcomes by taking part in national and international meetings, seminars and conferences and by presenting papers or by taking part in other dissemination activities.

WP 2; All partners will inform and engage strategic partners in the project work, especially in the field of education and training.

WP 3; All partners will be involved in the internal monitoring procedures by responding to partner 12 surveys and/or progress reports. The quality assessment procedure is ongoing.

WP 4; Project partners, who still are in the midst of setting up national nodes, will deliver these at the end of the project period.

WP 5; The procedure to test a certifying procedure will be finalized during 2011. The test will be carried out in one of the partner countries and supported by another partner.

WP 6; Remaining tasks are to set up an interim board for the European association; this will be done at the project meeting in Riga, Latvia, in April 2011.

## 6. Contribution to EU policies

The EUExNet project is building on the ideas of realizing the European Union's idea and targets of lifelong learning and developing a European Qualification Framework (EQF) and according to the 2020 strategy, the idea of developing a system for adult education and vocational education and training.

The idea in the project is to develop a European framework for competencies which is compatible with the ideas of the EQF, as the system developed within the project then will be possible to implement according to each European member states systems for vocational education and training. The European framework for competencies which is developed within EUExNet builds on the UK-system of occupational standards – which was developed within the UK system for National Qualification Framework NQF. The EQF is the core in the EU strategy for vocational education and training, which relates to the overarching policies related to lifelong learning for all citizens in the European Union. Additional aims, in the EUExNet project, are to develop a system for certifying competences, which will be compatible with the ECVET system developed according to EU strategies for lifelong learning.

The long term goal with the new system is to promote a mobile workforce through the means of well educated explosives specialists, who have acquired their certified qualifications through a transparent system for vocational education and training. Recognized competencies will also create attractive positions for young people entering a sector where lifelong learning at work is part of individual career trajectories.

In the light of recent industrial accidents (Toulouse, Enschede and Kolding) and studies on consequences of large scale explosives mishaps and accidents, the Seveso II Directive 96/82/EC was extended by the Directive 2003/105/EC of the European Parliament and of the Council of 16 December 2003 amending Council Directive 96/82/EC. The most important extensions of the scope of that Directive are to cover risks arising from storage and processing activities in mining, from pyrotechnic and explosive substances and from the storage of ammonium nitrate and ammonium nitrate based fertilizers. The EU directive states that all handling of dangerous goods and materials shall be performed by skilled and competent workers, without explicitly defining how competence or skills are certified.

For more information about the Seveso directive please view;  
<http://ec.europa.eu/environment/seveso/index.htm>)

## 7. Extra Heading/Section

Voices from UK partner - IExpE

The EU has recognized the issue of safe working within the explosives industry as a whole, and has issued DIRECTIVE 2007/23/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 May 2007 on the placing on the market of pyrotechnic articles. It is expected that further directives on other explosives substances and articles will follow, with the associated need for proof of competence of people employed in the safe design, manufacture, storage, movement, use and disposal of those explosives. The EUExcert Program has long recognized the quality of the UK's National Occupational Standards as well as those of other partners. In order to make use of the EUExNet and to take the EUExcert a step further towards universal recognition of the training of a worker from one partner nation in another state or region, it is essential that the EU adopts a set of European Occupational Standards for explosives working so that vocational and formal qualifications can be developed, which will in turn lead to certificates of competence that are recognized across Europe. The EUExcert Association should be the primary body for progressing this work or at least in advising the Commission

Voices from Portuguese partner - LEDAP

Nowadays the new technologies associated with computers and video conferences facilities allow to use e-learning system of vocational training in workplace training. Universities and vocational schools have been preparing courses based in these technologies; by his hand industry is developing methods for learning through experience. Although European convergence of education and training practices and principles has been implemented in some sectors of activity convergence of education and training practices on explosive sector is far to be achieved. Many obstacles still exist related to national regulations, language and recognition qualification and competence from one education and training system to another. A technical board within the framework of European Union is necessary to regulate European qualifications and competency framework of European workers in explosives sector, as shotfires and pyrotechnics.

Voices from Maltese partner - EFEE

With the Directive 2007/23/EC the European Commission gave to the CEN/TC 212 the mandate of elaborating harmonised standards for pyrotechnic articles. This task includes determination of criteria which determines whether "a pyrotechnic article is intended for use only by persons with specialist knowledge (C4, T2 or P2) ...". The Directive does not give a definition of "person with specialist knowledge". But the Directive states that "Member States shall inform the Commission of the procedures whereby they identify and authorizes persons with specialist knowledge". The number of fatalities and injuries in Fireworks justify the approaching of new partners in this subsector. The report of the explosives security experts' task force, Draft 2.0, Brussels, 14.05.2007, produces many recommendations that can be linked to EUExcert and EUExNet goals. This recommendation includes:

- Recommendation 31: Create a European wide certification scheme

Accreditation of laboratories/organisations. There must be accredited laboratories to test solution against the requirements and to issue a certification of minimum performance. In the future process, it will have to be determined who would do the accreditation itself [a solution would be a group of experts from Member States with relevant qualifications]. It is important that the accreditation and minimum requirements are the same in the entire EU so that solution only needs to be certified once.

- Identification of best deployment of/training for detection solutions (i.e., best practices);
- Certification of training and companies providing training;
- Certification of persons performing detection

- Re-certification and post-deployment verification of the whole system (determine whether the solution still works; this may also include accreditation of persons, calibration of machines and animals used for detection)
- Recommendation 34: Assess the need of the certification, testing and trialling processes for standards.

Standards may be required in order to assure the same quality of certification, testing and trialling across participating entities. These three processes are demanding financially, require considerably know-how and qualified personnel. Not all Member States have the capacities to perform them. Additionally, the Member States should consider pooling of resources and better coordination which would result in more rational use of tax payers' money and wider coverage of existing solutions. Mutual recognition of results would also help to save money of the private sector which has to contribute to these tests in each Member State doing the tests. Additionally, exchange of information on the results of these processes among public authorities across the EU 27 could help to increase overall security within the EU. It is very likely that the results will be classified and clear rules established on who could have access to it.

- Recommendation 35: Assess and improve where necessary the situation as regards the availability of training data for manufacturers of detection solution and feedback
- Recommendation 36: A database or databases containing the specifications of explosives produced within the EU could be created.