

## **Empowering today's workforce with highly coveted friction stir welding qualifications**

FSW-TECH project will support the creation of three new professional profiles of Operator, Specialist and Engineer

Industrial companies are faced with the need to improve efficiency, reduce footprint and be overall more sustainable. One pathway to achieve these goals is through the usage of materials that have high strength, low weight, good toughness and excellent fatigue life. Applications range from the manufacturing of lightweight boats, trains, airplanes to indeed any structure where these requirements are key to the production process and desired outcomes. In these scenarios, which are increasingly prevalent, friction stir welding stands out as a highly efficient technology to leverage, one that is expected to grow at a CAGR of 7.1% during the forecast period 2016 – 2024<sup>1</sup>. But leading companies in the adoption of this technology face the uphill struggle to find qualified professionals to perform these operations. This is where FSW-TECH comes into play, with a consortium from top organizations in six countries - Slovakia, Slovenia, Portugal, Romania and Belgium.

This project ambitious goal is to support the creation of three new professional profiles (European Friction Stir Welding Operator, Specialist and Engineer). To achieve this, FSW-TECH has come out with a novel approach for the delivery of European Qualifications, including work-based learning with common European tools such as Learning Outcomes, the European Qualifications Framework (EQF) and European Credit system for Vocational Education and Training (ECVET). As a result, there is a transparency between Vocational Education and Training (VET) systems, while international recognition increases the potential mobility of specialists across European countries. The deliverables of this project include new Guidelines, training manuals and methodologies to boost high quality and efficient work-based learning in VET. The approach is also in line with the European Union's targets and the objectives of the Erasmus+ program specifically for personnel working in the Manufacturing sector.

The impact on national VET systems will be felt in partner countries, with meaningful improvements and an overall modernisation six month onwards. This quick effect is due to the added value of the partnership, which involve different stakeholders (HE institutions, VET organisations, companies and European association) in the training process in order to make it more responsive to new challenges in the sector.

### **A growing gap between industry needs and existing qualified professionals comes into the limelight**

According to SME Associations Research (Flexifab project, 2013), the industrial need of European metal workers is related to 3 main factors: welders stop working before retirement age; skills shortage (there is a shortfall of 150,000 welders in Europe); and issues related to welding aluminium structures (due to skills shortage, weld defects are more prone to occur). This global shortage is compounded, on the particular case of friction stir welding, by the quick pace of adoption of this technology, which makes it evermore relevant to respond. Also, best estimates indicate that at least 20% of the 20,000 professionals that each year attend EWF Courses/Qualification for Welding Personnel will require an upgrade of their qualifications on aluminium.

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<sup>1</sup> <http://www.credenceresearch.com/report/friction-stir-welding-market>

This is the special context in which FSW-TECH was born, with welding education and training for technicians, practitioners and welders to include FSW learning modules in their basic programmes. The development of the Guidelines for the new professional profiles will have a impact by reducing skills mismatches and creating three professional profiles: European Friction Stir Welding Operator (EFSW-O), Specialist (EFSW-S) and Engineer (EFSW-E).

### A comprehensive project and deliverables

FSW-TECH will support the creation of training manuals, the review of 3 professional profiles and multimedia materials in 4 languages, allowing to mitigate the identified EU market need. Overall, the top project objectives are:

- To deliver a European qualification that will improve the quality of VET system by incorporating common European tools (Learning Outcomes, EQF, ECVET), enhancing the transferability between VET systems;
- Create and implement a new qualification programme for FSW, regarding to contents, methods and in terms of transparency and recognition between European countries;
- Each harmonised standard of qualification in FSW sector, aligned with the industry requirements, to promote mobility of specialists in Europe;
- Involve different stakeholders (companies, European associations, VET organisations) in the training process in order to make VET more responsive to new challenges in the sector;
- Foster new learning opportunities, in an easily accessible and career-oriented VET profile.

This type of activity in combination with the adequate preparation of Qualified personnel is critical to ensure that companies across Europe have the proper tools to address and comply with the challenges they face, contributing to restoring Manufacturing into Europe.

### Project consortium

The project consortium is constituted by leading organizations from six European countries – Slovakia, Slovenia, Portugal, Romania and Belgium – with strong competences in Vocational Education and Training that use, and have a strong knowledge of, the leading edge harmonized qualification system devised by EWF. Consortium members comprise **VÚZ – Vyskumny Ustav Zvaracsky - Priemyselny Institut Sr**, acting as project coordinator; ([www.vuz.sk/en](http://www.vuz.sk/en)); **IZV - Institut za varilstvo** ([www.i-var.si](http://www.i-var.si)); **ISQ – Instituto de Soldadura e Qualidade** ([www.isq.pt](http://www.isq.pt)); **ASR - Asociatia de Sudura din Romania** ([www.asr.ro](http://www.asr.ro)); and EWF, the European Federation for Welding Joining and Cutting ([www.emf.be](http://www.emf.be)).

### About the European Federation for Welding, Joining and Cutting

EWF is a pioneer in implementing a harmonised qualification and certification system for joining professionals. Through European projects, EWF has been innovating in training methodologies, and involved in the development of new technologies and uses for joining. Through its member organisations, EWF has established a firm link to the local industry, providing knowledge and training as well as participating in research initiatives that address the most pressing questions and challenges in the field of joining technologies.

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