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IO 4 European Guideline for Implementation of EDTT Profile Curricula

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1. Introduction

The present document, developed in the framework of TRUST project stands for the delivery of Intellectual Output 4 (IO1: European Guideline for Implementation of EDTT Profile Curricula) and provides to all partners the basis for the development of the new professional profile (European Destructive Testing Technician (EDTT), its qualification standard and training courses as well as other relevant outcomes to be used for the implementation of the qualification at both national and European level.

Partners will be able to address the industry needs and to know how the EDTT qualification can be developed so as to address those needs. Despite the generalized feeling that a new qualification on destructive tests of welded joints is needed, measures were undertaken in order to collect and include relevant information that allowed the working group to identify specific topics the new qualification guideline should focus.

This document is intended to provide guidance to Authorized Training Bodies and to support participants attending EDTT training Courses, based on harmonized access conditions.

The principle is getting the desired knowledge and recognition of activities performed under the appropriate control of an EWF Authorized Training Body by using a detailed theoretical and practical curriculum detailed in the frame of the EDTT Guideline, so as to cover specific topics of the European Destructive Testing Technician.

The developed guideline includes the minimum requirements to get the process recognized within the EWF qualification system. Those minimum requirements can be expanded

Nearby the DT relevant norms, used in the process of creating the Guideline, the following documents were used as referentials (latest revision applies):

- EWF-IAB-252 Personnel with Responsibility for Welding Coordination;
- EWF-416 Rules for the implementation of EWF Guidelines for the education, examination and qualification of welding personnel;
- EWF-656 EWF operational System

The training program was designed so as to balance the time spent for the theoretical and the practical teaching.

Based on the outcome of the previous los the NQF was specifically established and defined for the access conditions.

The curricula, in terms of training in MechDTs involving tensile tests, bend tests, impact strength tests, fracture tests and hardness measurements was established as not be divided into modules, since the topics addressed are part of a common core.

Also the training in macro- and microscopic examination of welded joints included the development of two modules:

a) The Basic Level (BL) module, designed for operators (persons preparing specimens for macro- and/or microscopic metallographic tests) that are not assessing the results of the above-named tests. The training objective is familiarise the applicants with practical methods of preparing specimens for macro- and microscopic metallographic tests.

b) The Standard Level (SL) module, designed for personnel who are primarily involved in assessing the quality of joints (welding engineers, inspectors of welded structures, workers in quality control departments etc.). It is also intended to provide also a primary knowledge concerning the identification of metallographic structures based on light microscopy.

The BL and SL modules mentioned in the Guideline are independent of each other, meaning that the participation in the SL module does not require participation in the BL module and vice versa.

Were it was considered as relevant, the teaching hours were developed in the form of Demonstrations or Exercises.

Brief didactic instructions for theoretical lectures were developed and are include in the guideline. Theoretical lectures were aimed to prepare applicants for the informed and safe performance of DTs of metallic materials and their welded joints, to acquaint applicants with the interpretation of test results, to instil in applicants the primary principles of the preparation and handling of test specimens, and to acquaint applicants with the criteria and methods of assessment of test results based on related standards, regulations, guidelines, and so on.

When discussing the methodology of DTs and their application in welding engineering, was considered as necessary, reference to appropriate standards and to the use appropriate welding terminology was mentioned as to be considered.

The involvement of multimedia presentations, didactic films, and exhibits (specimens prepared for tests, specimens after tests, fractures, etc.) was also requested.

For the HSE-related issues during DTs, applicants lectures, special attention was to request that special attention should be directed to specific hazards arising from various aspects of DTs, for example moving (rotating) machinery elements, electrocution, cooling medium vapours, and caustic chemicals such as acids and other hazardous substances. It was also requested to remind applicants of basic first-aid principles.

The developed Guideline

The final examination was detailed so as to include a theoretical and practical part, conducted by an examiner.

The theoretical part of the final examination was aimed to verify the applicant's knowledge in relation to the entire scope of training and has the form of a multiple-choice test.

The theoretical examination was considered as passed if an applicant has properly answered a minimum of 60% of examination questions.

The practical part of the final examination was aimed to verify the applicant's practical skills in the performance of a test or a measurement involving each area covered by practical training in a laboratory (tensile tests, bend tests, impact strength tests, and hardness measurements) as well as the preparation of a test report using a given form.

The Guideline defined that the practical examination is passed if, during the examination, the applicant has demonstrated practical skills related to activities preceding a test, is capable of performing a test, and can assess and document the test result.

The final examination is considered as passed if the applicant has passed both the theoretical and practical parts of the examination.

All partners have been involved in all activities carried out in the scope of IO4 and for elaborating the Guideline. Specifically, the partners are listed as follows:

- Łukasiewicz Research Network – Upper Silesian Institute of Technology (former Łukasiewicz Research Network - Institute of Welding), Poland.
- European Federation for Welding, Joining and Cutting, Belgium
- Instituto de Soldadura e Qualidade, Portugal
- Istituto Italiano della Saldatura – Ente Morale, Italy
- Institutul National de Cercetare Dezvoltare in Sudura si Incercari de Materiale - ISIM Timisoara, Romania.