EXPERT OPINION DOCTORAL THESIS

PhD student: Dipl.- Ing. Ralf Holstein
Title of doctoral thesis: Qualification Profile of Nondestructive Testing Personnel
Study programme: Management of Industrial Systems
Training department: VŠB – Technical University of Ostrava, Faculty of Metallurgy and Material Engineering
Supervisor: Prof. Ing. Jaroslav Nenadál, CSc

The thesis deals with the "profile of NDT (NonDestructive Testing) personnel qualification". While NDT often plays a critical role in maintaining the quality and guaranteeing the safety of human and environment, it must be performed with sufficient reliability. As presented in the dissertation it is state of the art to distinguish four major influences on reliability: The intrinsic capability of the method, the application conditions, the human operator and the organizational context. The dissertation is focused on the organizational context of NDT.

This is a current topic, both from the perspective of NDT service inspection companies (laboratories), and so from the perspective of their customers.

The works contains 109 pages of text including 39 figures, 65 references and 1 annex consisting of 10 pages. Thesis is structured in appropriate way, there is balance of theoretical part based on the review of existing publication in this field and practical part.

The research questions in response to the existing gap in transferring the knowledge about organizational context of NDT to standards and practice are defined and formulated into 11 hypotheses. The descriptive research methodology and survey technique have been used to collect data. The samples from specific population of NDT companies has been selected to obtain a survey of the real situation. The e-questionnaires was used as only tool for it. The survey showed interesting details about the organizational context of NDT in practice of service inspection companies.

The obtained data was analysed from different point of view and subsequently concluded that the questionnaire results are consistent and can be a good basis for following interpretation. The formulated hypotheses were evaluated. The method “Expert Estimation” was used for following discussion of different factors on the reliability of NDT including Internal and External context of NDT. As the result of this discussion the proposals regarding the practices of NDT service inspection companies were defined.
The further works to better understanding of the basis of organizational context in NDT are mentioned in the conclusion of dissertation.

PhD thesis is in term of formal, stylistic and graphical appearance processed to required level. However, with regard to the formal part of the work, I have the following comments:

1. The structure of the work referred to on page 11 should be listed at the very beginning of the work before the "Introduction" section on page 9.

2. The meaning of the abbreviations HRA on page 12 it is not mentioned in the list of abbreviations on page 109 or elsewhere in the text.

3. The formula for sampling error on page 53 is marked as "Typical formula". It should be properly referenced, from which he was taken.

Summary.

I evaluate the dissertation thesis of Dipl.-Ing. Ralf Holstein as a very good one. The objectives of the thesis have been met. The knowledge found in the work represents significant value to science and are useful in industrial practice. I fully recommend the thesis to be accepted and after successfully defence in front of state commission to award Dipl. Ing. Ralf Holstein scientific degree Ph.D.

Within the defence of submitted doctoral dissertation I am asking PhD student on following question:

- The evaluation of the share of human factor (including the influence of testing device operator, as well as partially the organizational context), on the outcome of the testing is not a simple matter. MSA (Measurement System Analysis) methodology can be used for this purpose. This methodology in compulsory in automotive industry. Is it also used in NDT? If not, do you think that would have been applicable in this area?

In Ostrava 15. 8. 2014.   

[Signature]

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