ICNDT Working Group 2: Education and Research
Activity Report and Call for Support

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Abstract:
The ICNDT WG 2 was constituted at the 18th WCNDT in Durban to look into Education and Research in NDT. ICNDT Executive Committee compiled a business plan for WG 2. In 2013 two regional meeting have been held - at the QNDE Conference in Baltimore, USA and the second at the 13th APCNDT in Mumbai, India. The European NDT conference gives the opportunity to feedback on the aims and objectives of the WG 2 and to obtain input from parties in Europe who may have interest in Education (at University level) and Research in NDT.

Keywords: Education, Training, University Degree, Research in NDT

1. Introduction

The International Committee on Non-destructive Testing (ICNDT) was constituted in 1955 by a group of European Countries, USA, Japan, China, India and the USSR. Its main objective was to gather Scientists and Technologists from all over the world in order that they could pool together their common experiences in promoting the development of NDT applications which was in its very early stages.

For many years the main aim was to organise a World Conference on NDT once every 4 years and to promote and assist countries in establishing NDT societies who on their part promoted the correct use of NDT in their respective countries.

Since the nineties the ICNDT has been seeking avenues to play a larger role in NDT worldwide and in 2000 a new constitution was adopted. In 2008 the ICNDT was registered as a non-profit organisation in Vienna. The members elect the executive committee at the general assembly and the executive committee runs the activities of the ICNDT in line with a strategic plan.

2. The ICNDT Strategic Plan

The Executive uses the strategic plan to manage the activities of the ICNDT. The plan is divided into four sections:

- Promotion of the importance of NDT
- Support to ICNDT Member Societies
- Certification
- Education and Research
- Radiation Protection
ICNDT Management and Administration

A copy of the strategic plan can be viewed on the ICNDT homepage (www.icndt.org) in the document store.

3. The Education and Research section

Concerning the Education and research section, the following activities were identified and pursued:

- A global survey of NDT Education at University level
- Promotion of international partnerships between Universities to facilitate NDT education at University level, starting with a survey of existing international partnerships, for publication on the ICNDT website
- The establishment of Training guidelines for novel techniques
- Arrange International Workshop on Imaging NDE
- The production of ICNDT Monographs

The progress on the above activities has been slow and limited. The following activities have been pursued and staged successfully:

3.1 The global survey of NDT Education at University level started as an EFNDT project and is still on going. This information will be published on the ICNDT webpage when completed.

3.2 Workshops were staged in 2013 both at the QNDE Conference in Baltimore USA, and at the 11th APCNDT in Mumbai, India. The objective is to share best practices internationally in NDT Education. Seven presentations from around the world were delivered in Baltimore, some of which were repeated in India. The additional presentations in India were delivered by India, Russia and ASNT. The following are some of the conclusions reached:

- Levels of NDT education and training and identified deficiencies:
  - NDT awareness for practicing Engineers must be pursued;
  - NDT awareness as part of Batchelor level courses in Engineering, including the so-called NDT Minor option, have been successfully offered at IOWA State University;
  - NDT Batchelor level degree courses are becoming available in many countries e.g. at Northampton University in the UK for NDT practitioners;
  - NDT Certificate level and Masters level courses are offered at IOWA State University and Dresden International University. These courses are in the process of being made available on-line and, in parts, through distance learning;
  - NDT courses are taught as part of a PhD or Engineering Doctorate degrees
  - Classical NDT training for NDT Practitioners (theory and practical) at Level 1, 2 and 3 for eventual NDT certification are offered all over the globe in accordance with the ISO syllabus TR25107 or equivalent syllabi as short courses.
  - In the USA a large number of colleges offer NDT education, all leading to certification to ACCP or ASNT T1A. This was news to many participants, as
the perception internationally is that in the USA NDT personnel are trained in
the non-formal sector though a series of short courses and not in structured
academic programmes as mentioned in the presentation;
- In India the numbers of NDT personnel trained at colleges and Universities
were staggering and the education system has proven itself;
- The presentation on education in Russia focussed on the online learning
programmes under development there. By making use of these technologies
the best type of training and education will be available throughout Russia and
will also be available to all Russian speaking countries.

3.3 The ICNDT will establish links on the ICNDT webpage to all universities and training
institutions, to provide easy access to these courses and to facilitate
communication between the institutions with regards to education at large.

3.4 To assist Universities around the world to pitch the various courses at the same level, the
ICNDT will publish lists of typical and suitable literature on the webpage. It is the intent
to comment of the level of education for which literature is ideally suited. Through such a
data base Universities wishing to offer education in NDT can orientate themself as to
what is practiced in other countries.

3.5 For the awareness training, even at the engineering level, various PowerPoint
presentations and videos have been produced. A list of this material, including the links,
will be published on the webpage.

3.6 Concerning research in NDT it became clear that the role that ICNDT could play would
be a role to disseminate information on research institutions and there area of interest and
expertise. The ICNDT has established on its website (www.icndt.org) a new register of
institutions and other organisations that carry out research into NDT and associated
disciplines. The register can be found under the ‘Resources’ tab on the home page. Authorised representatives of organisations involved in research activities are invited to
add their details free-of-charge, at: www.icndt.org/Resources/RegisterEntry.aspx It is
clear that the register is compiled from information supplied by research organisations.
Whilst every effort is made to ensure that the details are correct and as up-to-date as
possible, ICNDT cannot accept any responsibility for errors or omissions.

3.7 The establishment of Training guidelines for novel techniques
- As new NDT techniques are developed the need arises for appropriate training
material. Although the industry at large as well as Universities and research
institutions publish books and reports on their new developments, the ICNDT is from
time-to-time approached to assist in this field. Technologies where a need for traing
material has been expressed includes: Advanced NDT for which the IAEA is
publishing a TecDo; NDT of Concrete structures; A Practical guide to IRT; NDT of
cultural heritage artefacts; Phased Array UT and TOFD.
- The IAEA in co-operation with APCNDT countries and the BAM in Berlin has
compiled a comprehensive course in digital radiography and Digital Imaging NDT. In
Durban a pre-conference workshop was offered on digital imaging. It is the intent to
promote this training internationally, to assure that the users of these “new”
technologies can reap maximum benefit of employing these techniques.
- To facilitate communication between Universities and also between Research
Institutions the ICNDT will assure that biannual workshops will be included in the
Conferences organised in the ICNDT regions as well as at the WCND, which takes place every 4 years.

4. Conclusion

This is a short overview of interactions which have taken place in the past 2 years since the 18th WCNDT in Durban. Much more needs to be done and the ICNDT invites you to submit proposals and suggestion to Working Group 2 on issue you would like to see addressed.

5. Acknowledgement

The input from the ICNDT Executive committee, the ICNDT Secretariat, as well as the input to the workshops by the invited speakers is acknowledged and appreciated.