ICNDT

The World Organisation for NDT

EF European Federation for Non-Destructive Testing

NDT

ASME PVPC NDT Workshop, Paris

Sunday 14th July 2013

Dr Mike Farley

Chairman, ICNDT

ASME PVPC NDT Workshop

Contents of this paper

- Introduction to ICNDT and EFNDT
- ICNDT strategy on NDT
- Background on NDT Personnel Certification
- Provide context for today's speakers

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- First meeting of the International Committee for NDT in 1955
- Meetings and activities originally linked to World Conferences, every four years eg 1976 Cannes
- Policy and General Purposes Committee was created in 1992 to advise on strategy and provide link to Regional Groups (EFNDT, APCNDT, PanAmNDT and AFNDT)
- New constitution approved in 2000 and legalisation of ICNDT as a not-for-profit organisation, registered in Vienna, in 2008

ICNDT

- Members are the national NDT Societies – more than 60
  - Meetings of the General Assembly are held every two years in conjunction with the WCNDT and a Regional Conference
- ICNDT cooperates closely with the Regional Groupings which are represented on our Policy committee (PGPC)

AFRICAN FEDERATION OF NDT
AFNDT

EF NDT European Federation for Non-Destructive Testing

APCNDT

Pan Am NDT

- Members elect a Chairman, Executive Committee and Secretariat to manage its affairs

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ICNDT Strategic Plan

The ICNDT General Assembly held in Durban in 2012 confirmed five key areas for action and these are the basis of the 2012-16 Strategic Plan:

- Support for NDT Societies
- Promotion of the importance of NDT
- NDT Qualification and Certification
- NDT Education and Research
- NDT radiation safety and security

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ICNDT Strategy - NDT Qualification and Certification

- NDT is important for safety
- NDT needs to be reliable
- NDT is “globalised”
- Qualification and certification are vital links in the NDT quality chain

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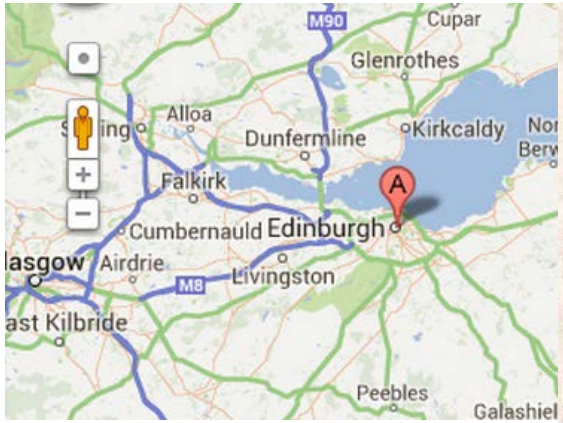
NDT of the Forth Road Bridge, Edinburgh Scotland



- In 2004 following the discovery of co
  commission an acoustic monitoring s
- The system is designed to provide early warning of any potential problem areas or increases in the rate of deterioration. It uses a series of microphones positioned along the cables to listen for the unique sound of a wire breaking.
- Fifty new breakages were detected by 2009 and it was judged that continuing deterioration could lead to a ban on lorries using the crossing by 201
- The government decided to go forward t
  Crossing) at a forecast cost of £1.45Bn.
- All three main contracts that make up the

So NDT has both allowed the bridge to continue to be used but appears to have given it a life-sentence

NDT needs to be reliable!

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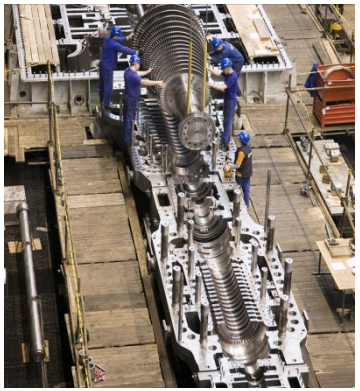
Globalisation of trade… and NDT

- Design, building and operation of plant is globalised
- Industrial companies procure equipment and materials from wherever is most cost effective, increasingly from developing countries, using local NDT services working to the contract standards
- Construction may be by home personnel or by teams from third countries
- Safety, reliability and availability of plant and machinery depends on the whole supply chain of companies and contractors all around the world, each with their own NDT personnel



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Vital for Reliability of NDT

There are three important factors to achieve the necessary quality and reliability of inspection:-

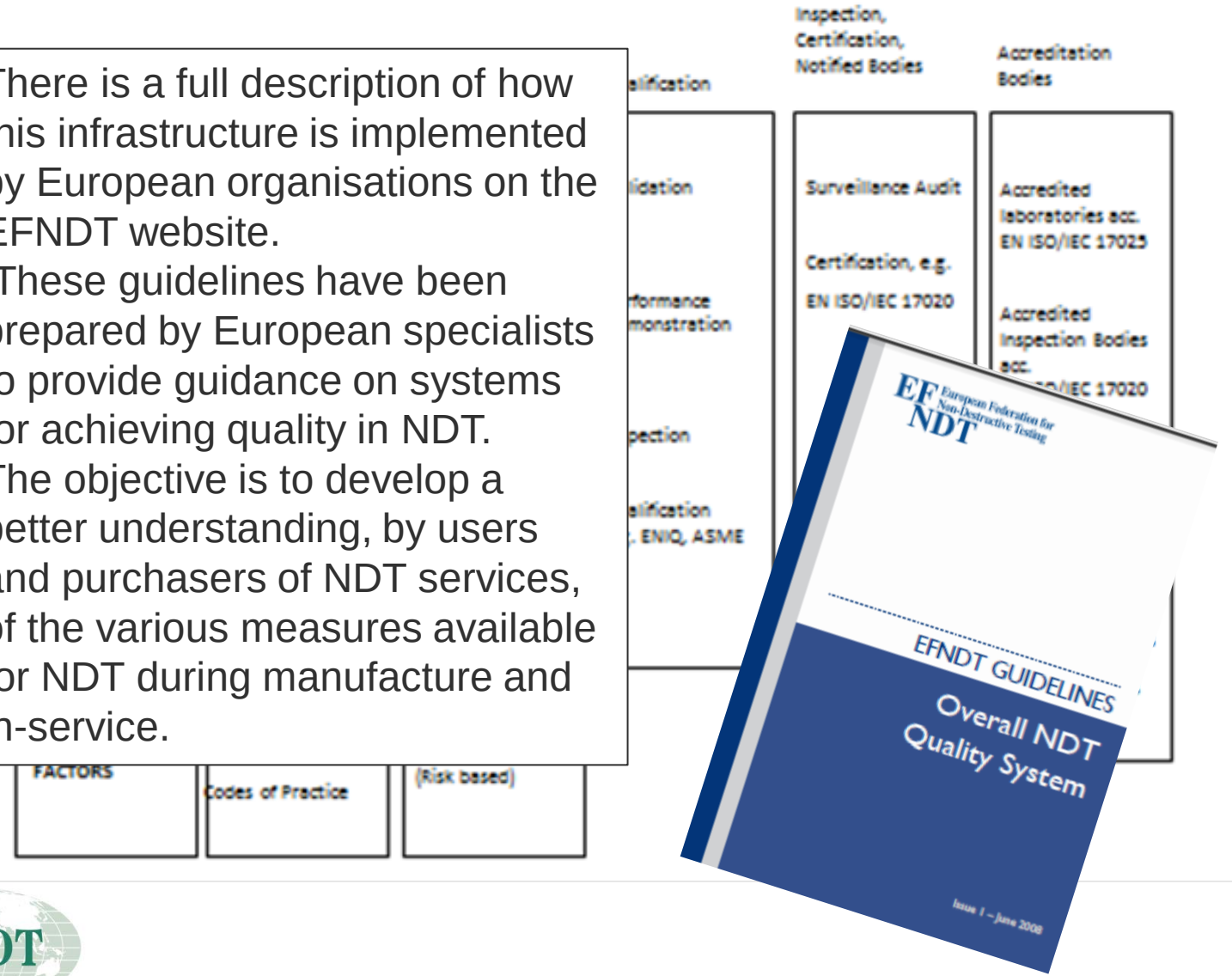
- The responsible engineer must specify his requirements very clearly in terms of the regions to be inspected and the types of flaws or deterioration to be looked for (all-encompassing combinations would be prohibitively expensive).
- The NDT methods, equipment and personnel must be capable of the purpose for which they are being employed.
- The selected NDT process must be implemented thoroughly.

NDT Quality chain

NDT depends on a whole chain of activities represented previously by the author as “the NDT quality chain”

NDT Quality infrastructure

- There is a full description of how this infrastructure is implemented by European organisations on the EFNDT website.
- These guidelines have been prepared by European specialists to provide guidance on systems for achieving quality in NDT.
- The objective is to develop a better understanding, by users and purchasers of NDT services, of the various measures available for NDT during manufacture and in-service.



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NDT Quality chain

NDT depends on a whole chain of activities represented previously by the author as “the NDT quality chain”

Elements of Personnel Certification – good practice

Education
Training
Experience
General theory exam
General practical exam
Specific theory exam
Specific practical exam

Central certification or in compan

+

Company specific training
In company experience
Company specific theory exam
Company specific practical exam

Company certification

Central Certification based on ISO9712 or EN473 and ISO17024 Accredited

=

Company/ Employer Authorisation to work

NOW one standard!

Cameron Sinclair ISO 9712

The employer retains responsibility

Overall process described in company's NDT Quality System (Written practice) checked/audited by external inspection authority (eg ASME, or Notified Body)

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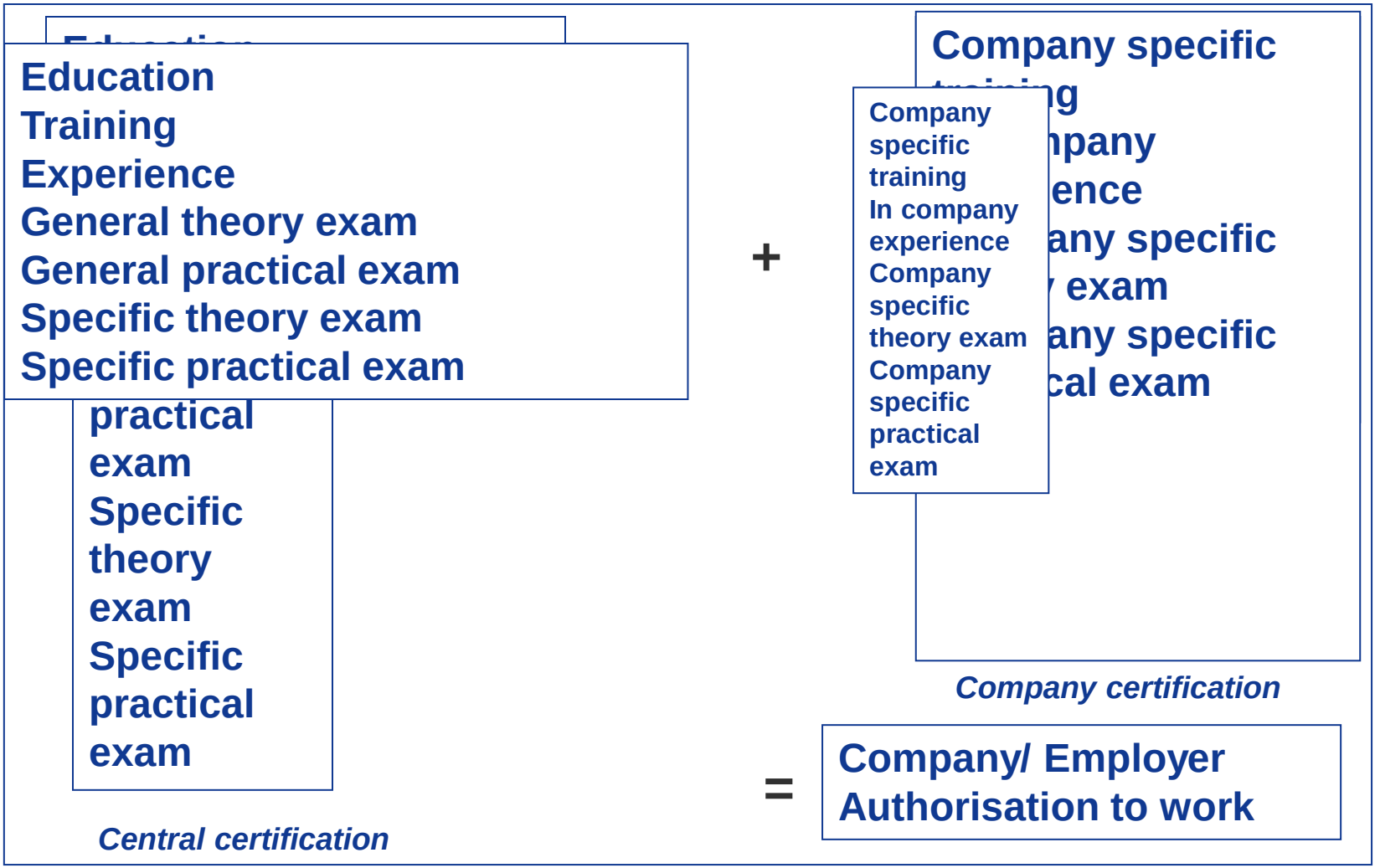
Elements of Personnel Certification – good practice



The employer retains responsibility

Elements of Personnel Certification – good practice

Education
Training
Experience
General theory exam
General practical exam
Specific theory exam
Specific practical exam

+

Industry specific training and examination

+

Company specific training, In company experience, Company specific theory exam, Company specific practical exam

ANDE certification

Mike Turnbow

Company certification

=

Company/ Employer Authorisation to work

Central certification

The employer retains responsibility

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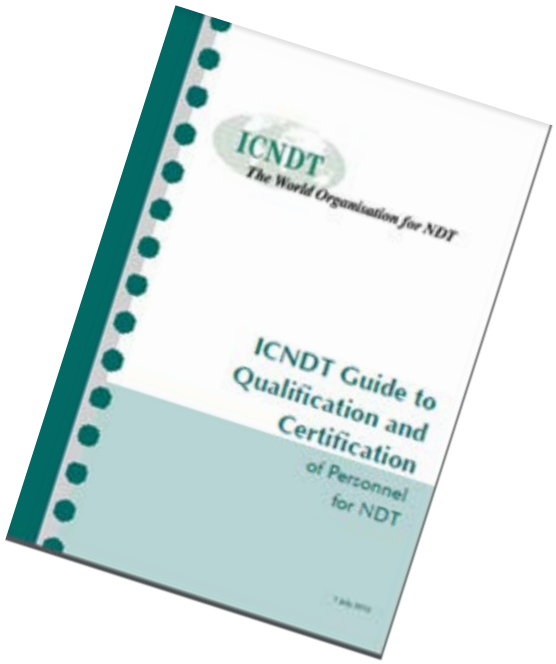
Some important activities of ICNDT



ICNDT Multilateral Recognition Agreement on Personnel Certification
Alexander Mullin

ICNDT PCB Conformity Assessment
John Thompson

ICNDT Examination Question Bank for ISO 9712

Closer liaison with IAEA to improve the strategic value of their support

Cooperated with World Institute of Nuclear Security to produce a Guide on Security of Radioactive Sources used for NDT

Promote integration of Education and Training routes with University modules and professional status

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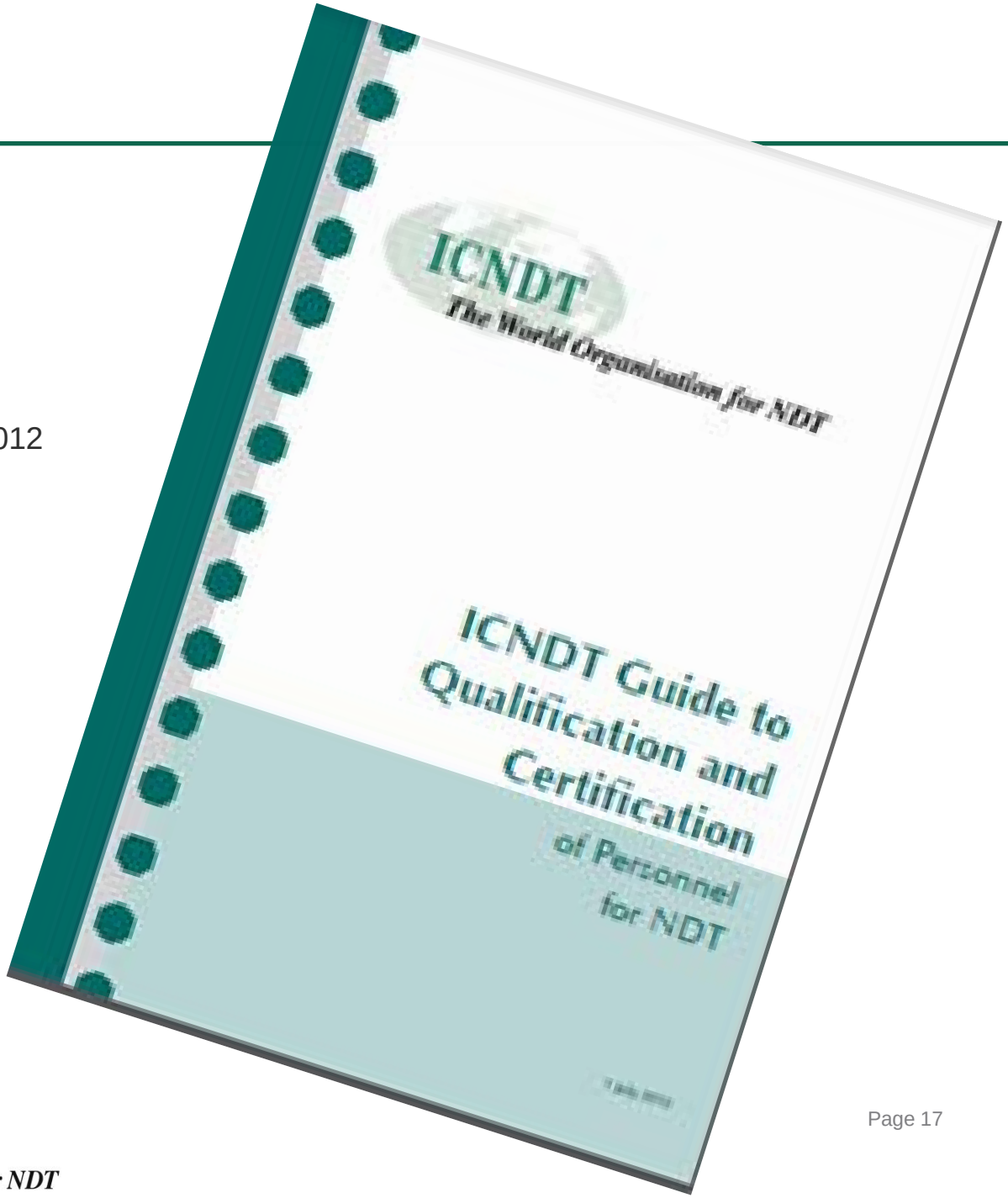
Latest version July 2012

www.icndt.org



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3. Responsibilities of the employer

An employer of NDT personnel carries important responsibilities for the overall quality of NDT operations. These should be reflected in the employer's quality procedure for NDT (which may be known as the written practice[1]). The employer retains these responsibilities whether he uses in-company certification, third-party certification or a combination of both.

This section of the ICNDT Guide clarifies the employer's responsibilities within the framework of using personnel qualified to EN ISO 9712 and gives guidance on how the employer should fulfil these responsibilities. In this context, the employer (or responsible agency) is defined as 'the organisation for which the candidate works on a regular basis'. If the individual is self-employed, he shall assume all responsibilities specified for the employer or responsible agency.

It is a central tenet of the standard that the employer has overall responsibility for the results of NDT operations and is fully responsible for the authorisation of his staff to work. In practice, this must include checking that the NDT tasks to be carried out are within the scope of the individual's certification (sector, method and level) and, if they are not, organising additional job-specific training and/or examinations (see Figure 1).

The employer is responsible for introducing candidates to the certification body and for documenting the candidate's education and prior experience. (If the candidate is unemployed or self-employed, the declaration of education, training and experience shall be attested to by at least one independent party.)

The employer must ensure annually that employees meet the visual acuity requirements of the certification body and must keep records of work experience that will be needed to demonstrate continuity of satisfactory work activity without significant interruption. This is important both for his own quality assurance and to support renewal/recertification.

To fulfil these responsibilities the employer should prepare and implement a quality procedure (or written practice) covering at least the above responsibilities and maintain adequate records.

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[1] See, for example, SNT-TC-1A published by ASNT.

The employer retains responsibility

2. Recommendations on qualification and certification

Recommendations to users of central third-party certification

When central third-party certification is appropriate, it is recommended that regulators and industry define the levels of competency of NDT personnel who are certified in accordance with EN ISO 9712 by a certification body accredited to ISO IEC 17024.

Regulators, users and auditors of NDT operations should recognise the importance of employers of NDT personnel properly fulfilling their responsibilities to authorise personnel to work after first confirming that their employees are adequately trained, experienced and qualified.

Recommendations to certification bodies

Certification bodies are urged to provide certification to EN ISO 9712 in order to maximise the value of their certification. In anticipation of future harmonisation, their training syllabuses should encompass the requirements of ISO/TR 25107.

Recommendations to national standards bodies

In adopting the international standard EN ISO 9712, the ISO member body is strongly urged to apply it without deviation from the original text in order to ensure that it acts as a harmonising influence. Failure to do so could result in a refusal to recognise or accept NDT personnel certification issued by certification bodies operating to national standards with deviations created under ISO guide 21.

Messages to industry

- Maximise use of the existing NDT quality infrastructure
- Use third party certification based on ISO9712 provided by an accredited Certification Body which is recognised by EFNDT/ICNDT
  - **Ralf Holstein DGZfP**
- Ensure adequate job - specific training and certification as recommended in the ICNDT Guide
- Document this in a Written Practice as required by ASME codes
- Remember we depend critically on the motivation of the individual NDT personnel, *avoid* multiple duplicate personnel examinations which demotivate people

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- Thank you for your attention
- Slides will be available on the ICNDT website www.icndt.org

- Mike Farley
  - **Chairman**
  - **ICNDT**
  - **Mike.Farley@icndt.org**

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Programme - Joint chairs :Mike Farley and John Thompson

Time	Topic	Presenter
13:00	Opening of the 3rd NDT workshop, EFNDT/ICNDT strategy on certification, followed by an introduction to the workshop programme and speakers	Mike Farley, ICNDT Chairman
13:30	An overview of 2nd party qualification, and a comparison with key criteria for 3rd party qualification and *certification*, summarising the pros and cons of each.	Ralf Holstein, DGZfP
13:50	Implementation of EN ISO 9712:2012 (Non-destructive testing – Qualification and certification of personnel) taking into account the recommendations from Informative Annex E (Engineering of NDT).	Cameron Sinclair, BINDT
14:10	Multilateral Recognition Agreements (for NDT personnel certification)	Alexander Mullin, RTC
14:30	Conformity assessment of NDT personnel certification bodies for conformity with 3rd party qualification and certification standards.	John Thompson, ICNDT
14:50	The present state of the ASME NDE personnel certification programme (ANDE) and its likely future effect upon the NDT personnel certification requirements of ASME codes, especially section XI.	Mike Turnbow, ASME
	ASME – use of international certification prgrammes	
15:20	Workshop discussion	Led by Mike Farley

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