



The World Organisation for NDT

Annual Report 2022

ICNDT is formally registered as a legal association in Vienna in accordance with the Austrian Corporations Act and has a bank account to conduct financial business transactions.

The constitution meets the requirements of the Austrian Corporations Act.

As an incorporated body, ICNDT is required to submit its Annual Report and audited Financial Report to the relevant Austrian authorities.

This is the Annual Report for 2022.

Vision and Mission

Our Vision

To create a safer world through wider use of non-destructive testing (NDT) and diagnostic technologies.

Our Mission

To lead a global network of NDT societies and their regional groups devoted to the promotion of the development of the science and practice of NDT for the benefit of the public worldwide.

Introduction

The operations of the International Committee for Non-Destructive Testing (ICNDT), its regions and its member NDT societies have continued during 2022, with much back to normal but still some impact from the COVID-19 pandemic, particularly in the timing of the World and Regional Conferences.

It had been recommended in 2020, confirmed in 2021, to make alternative arrangements for some of the ICNDT business that is normally conducted every four years at the World Conference and these arrangements were continued in 2022:

- The in-person General Assembly (GA) meetings should be postponed until the 20th World Conference on Non-Destructive Testing (20th WCNDT).
- The current office bearers, Secretariat and auditors should remain in office until the GA is held at the 20th WCNDT.
- The decision on the 22nd WCNDT should be postponed until the GA is held.
- The presentation of the ICNDT Awards should be postponed until the 20th WCNDT.

The Annual Meeting went ahead on 10 February 2022, online as normal, and there was an online General Assembly held on 15 June 2022. Details are given below.

Meetings, Committees and Groups

Annual Meeting 2022

The Annual Meeting of ICNDT members was held online on 10 February 2022, with 27 voting members and 11 observers present. Those present included: Dr Sajeesh Babu, Chair; Mr David Gilbert, General Secretary; Mr Gerhard Aufricht, Treasurer; Dr Mike Farley, Past Chair and ICNDT Advisory Committee (IAC) Chair; and Professor Younho Cho, President of the 20th WCNDT.

The Annual Report for 2021 was approved, along with the accounts for 2021 and the fees and budget for 2022, which were presented by Mr Gerhard Aufricht. Members were given an update on the plans for the 20th WCNDT, now scheduled for 27-31 May 2024.

The unconfirmed minutes of the meeting can be found at: https://www.icndt.org/ICNDT_Annual_Meeting_02_10_22_Unconfirmed.pdf

ICNDT Online General Assembly (GA) and 43rd Meeting

An online GA was held on 15 June 2022 at 11.00 am BST. The meeting was chaired by Dr Sajeesh Babu, ICNDT Chair, assisted by Mr David Gilbert, General Secretary. 31 voting members (including four regional representatives) and 20 observers were present.

Reports were received from the regional groups, the Membership Committee, the Working Groups (WGs) and the International Organization for Standardization (ISO) TC 135.

Dr Mike Farley presented a report on the workshop that was held on 1 October 2021, the objectives of which were to explore the challenges and opportunities that emerged from the impact of the pandemic on NDT society operations.

Revisions to Operating Procedures OP18 (ICNDT ICEC) and OP20 (ICNDT PCBA) were unanimously approved.

The dates for the 20th WCNDT were confirmed by the President of the 20th WCNDT (Professor Younho Cho) as 27-31 May 2024, with the venue now being Songdo Convensia, which is very close to Incheon International Airport.

It was announced that the exhibition space will be extended by 25%. The new dates in 2024 are well clear of the 16th Asia-Pacific Conference on Non-Destructive Testing (16th APCNDT), taking place from 28 February to 3 March 2023, and the 13th European Conference on Non-Destructive Testing (13th ECNDT), scheduled for 3-7 July 2023. The next Pan-American Conference for Non-Destructive Testing (VIII PANNDT) will be held in Canada in June 2025. The 21st WCNDT will be held in 2028.

Paul Grosser gave an update on the 16th APCNDT, to be hosted by the Australian Institute for Non-Destructive Testing (AINDT) at the Melbourne Convention and Exhibition Centre. Accommodation is within a five-minute walk of the venue. Good weather is predicted and Melbourne is an excellent venue and a very safe city. It is hoped to have more than 200 speakers.

Ten member societies gave short presentations on their activities.

The unconfirmed minutes of the meeting are available to view on the ICNDT website at: https://www.icndt.org/ICNDT_GA_2022_06_15_Internet_Unconfirmed.pdf

ICNDT Executive Committee (IEC)

IEC meetings were held online on 31 March, 6 May and 16 September 2022. These meetings were chaired by Dr Sajeesh Babu. In addition, several online meetings were held between the IEC and the WCNDT Organising Committee. IEC members also attended the General Assembly in June 2022.

ICNDT Advisory Committee (IAC)

Due to the postponement of the 20th WCNDT, there was no meeting of the IAC in 2022.

World Conference on Non-Destructive Testing (20th WCNDT)

The 20th WCNDT will now be held from 27-31 May 2024 at Songdo Convensia, Incheon, South Korea, following the rescheduling of the conference dates at the Korean Society for Nondestructive Testing (KSNT) Organising Committee meeting held on 16 December 2021. With new conference dates set for 2024 and the inauguration of a new KSNT President, Dr Dong-Jin Yoon, in 2022, the Organising Committee has been restructured to carry out all relevant 20th WCNDT works more efficiently. Dr Yoon also serves as Chair of the Organising Committee and other affiliated committees are functioning under reciprocal consultation to move forward the 20th WCNDT systematically.

The new conference dates were announced in January 2022 to all conference stakeholders: presenting authors, registered participants, exhibitors, sponsors and ICNDT member societies. Also, the official website of the 20th WCNDT (www.20thwcndt.com) was updated in June 2022 with new important dates, a revised conference programme and other essential information about registration and the exhibition. Online abstract submission and the registration system are now functional on the website so that additional submission of abstracts and registration will be possible.

The calendar of important dates during 2023 is as follows:

- **Abstract submission:** 31 August 2023
- **Notification of acceptance:** 31 October 2023
- **Extended abstract or paper submission:** 31 December 2023
- **Registration and payment of presenting authors:** 31 December 2023.

There was excellent progress to the end of November 2022, with a total of 1168 abstracts submitted, 591 registered participants from 42 countries and 191 exhibitor companies, despite the postponement of the conference to 2024. Professor Younho Cho and Dr Dong-Jin Yoon of KSNT regularly reported any progress to the IEC and the online GA.

More technical papers are expected to be submitted and additional exhibition booths are available, which will lead to the best and latest innovations being showcased during the 20th WCNDT.

During 2023, the Organising Committee will make further efforts to retain and build on the attendance for the 20th WCNDT to continue towards a successful physical conference and exhibition.

Note: At the meeting of the IEC on 27 November 2021, which included representation from the four regions, it was agreed unanimously that 2024 will be kept completely free for the 20th WCNDT, ie there will be no regional conferences or competing national events.

Working Group 1 (Qualification and Certification)

An online meeting of Working Group 1 (WG1) was held on 14 June 2022. The following issues were discussed: WG1 membership; the updating of the WG1 Action Plan; the updating of the *ICNDT Guide to Qualification and Certification of Personnel for NDT*; the *ICNDT Guide to Good Practice – Fraudulent Management by Personnel Certification Bodies*; the need for interpretation of ISO 9712:2021; the ICNDT Multilateral Recognition Agreement (MRA) Quality Objective – Continuous improvement; the future of the ICNDT Certification Executive Committee (ICEC) Examination Question Bank (EQB); the WG1 page on the new ICNDT website; a report on the work of the ICEC; the session and workshop on certification being held at the 20th WCNDT; and EA guidance on the transfer of certificates under ISO/IEC 17024.

It was decided to start work on:

- Interpretation of ISO 9712:2021 to provide certification bodies and end-users with recommendations on how to implement the new provisions of the standard;
- Updating the *ICNDT Guide to Qualification and Certification of Personnel for NDT* to reflect the changes to ISO 9712 and provide information on the state-of-the-art NDT personnel certification around the world;
- Organising a workshop on personnel certification in conjunction with the 20th WCNDT in South Korea; and
- Developing recommendations for the recognition of certificates under ISO/IEC 17024:2012 and ISO 9712:2021.

The *ICNDT Guide to Good Practice – Fraudulent Management by Personnel Certification Bodies* will be published on the ICNDT website as soon as an appendix with a sample of the risk register is ready.

The ICNDT Certification Executive Committee (ICEC)

The activities of the ICNDT Certification Executive Committee (ICEC) centre around the Multilateral Recognition Agreement (MRA), ICNDT Personnel Certification Body (PCB) conformity assessment and the ICNDT Examination Question Bank (EQB). The ICEC carries out most of its work via email and the internet. It had online meetings on 17 February, 19 May, 8 September, 16 November and 8 December 2022.

Present ICEC members are as follows:

- Mr Harold Jansen (Chair and Africa representative)
- Mr Alexander Mullin (WG1 Chair)
- Dr Norikazu Ooka (Asia-Pacific region)
- Mr Gerhard Aufricht (ICNDT Treasurer)
- Mr João Rufino Teles Filho (Pan-America region)
- Dr Thomas Wenzel (Europe region)
- Mr Peter Milligan (interim appointment).

The Secretary is Mr Colin Bird, who can be contacted at: icec-secretary@icndt.org

In response to the COVID-19 pandemic, the ICEC arranged for OP18 to be updated to enable PCBs to perform remote examinations and to extend certification as necessary to maintain their registration and personnel certification. It can now be reported that the ICNDT OP19-registered PCBs are fully audited and registered.

There are now 47 signatories to the MRA Schedule 1. There are 21 PCBs registered under the MRA Schedule 2.

The ICNDT register of PCBs has been extended to highlight MRA membership and all known PCBs have been contacted to supply data. The revised register will be published on the ICNDT website.

The ICEC has developed an online delivery system for the ICNDT EQB. This online EQB has been demonstrated to the current EQB users and the new delivery method is now being trialled by volunteer PCBs. The ICEC has been approached by additional PCBs showing continued demand for the EQB, both in its current form and the future online version.

Membership Committee

Chair: Mr João Conte

Members: Mr Alexander Mullin, Mr David Gilbert, Professor Ferid Herelli, Mr Les Dick, Dr Matthias Purschke (to be replaced following his retirement) and Mr Shohei Ooka.

Actions:

Restructuring of the Committee: representatives to include Latin America and North America.

There is a challenge in that countries wishing to form an official society are facing several difficulties (for example ACHISEND (Chile), ASENDEC (Ecuador), ASOVEND (Venezuela) and CONENCA (Dominican Republic)) as some smaller societies find it difficult to pay the annual (joining) fee.

Working Group 3 (Research and Education)

There were no meetings of Working Group 3 (WG3) during 2022. One of the Co-Chairs, Dr Anton Erhard, retired during the year and his successor, Dr Thomas Wenzel, was appointed in his place by the IEC. ICNDT is grateful to Dr Erhard for his contributions to its activities and welcomes the continued support of the German Society for Non-Destructive Testing (DGZfP).

The **Specialist International Group on NDE 4.0**, led by Dr Johannes Vrana and Dr Ripi Singh, initiated the 2nd International Conference on NDE 4.0. This conference, which took place in Berlin from 24-27 October 2022, was organised by DGZfP and co-sponsored by the European Federation for Non-Destructive Testing (EFNDT), ICNDT, the Technical University of Munich (TU München), TIC Council and the International Data Spaces Association (IDSA). The conference, the various panel discussions, the keynotes from various Industry 4.0 players and the excursion to the Berlin Center for Digital Transformation were greatly appreciated by the attendees. The Kurzweil Award for High Impact in NDE 4.0 was awarded for the first time during the conference to Professor Dr Norbert Meyendorf and Professor Dr Bernd Valeske for their work: 'Starting the field of NDE 4.0'. The members of the Specialist International Group (SIG) voted for the proposal of the Indian Society for Non-Destructive Testing (ISNT) to organise the 3rd International Conference and Exhibition on NDE 4.0 in India (scheduled to take place in February 2025).

The SIG held four meetings in 2022 (three virtual and one hybrid during the conference) to gain an insight into the ongoing activities of the sub-groups and to discuss the lessons learned from the conference. The work of the sub-groups is summarised as follows:

- Sub-group T1 for Sharing of International R&D and NDE 4.0 Activities is led by Dr Johannes Vrana and Professor Dr Norbert Meyendorf. It focused firstly on organising the NDE 4.0 conference (led by Dr Vrana) and secondly on organising an NDE R&D data-sharing platform (led by Professor Dr Norbert Meyendorf).
- Sub-group T2 for Guidelines on Data Formats, Interfaces, Exchange and Ontology is led by Dr Johannes Vrana and Mr Pranay Wadyalkar. It focused on gathering information around ongoing activities such as OPC UA, DICONDE and HDF5. Currently, the group is developing the ontologies for DICONDE and HDF5 and has started looking into the activities of the other groups.
- Sub-group P1 for Common Terminology was led by Mr Don Andrews. Due to other responsibilities, Mr Andrews could not continue. Fortunately, Professor Dr Nathan Ida was able to pick up this group. The group is currently in the process of publishing a Wikipedia article on NDE 4.0.
- Sub-group P2 for Knowledge Exchange Channel (Publications, Platform and Forum) is led by Ramón S Fernández Orozco and Dr Serge Dos Santos.
- Sub-group P3 for Guideline for Roadmap/Application on NDE 4.0 is led by Dr Ripi Singh and Ramón S Fernández Orozco and produced a guideline on how to create a roadmap for NDE 4.0. This document was forwarded to the leaders of WG3 on 12 April 2022 with the intention of presenting it to the ICNDT Board of Directors (BoD). Unfortunately, no feedback has been provided to the SIG to date.
- Sub-group E2 for Ethics, Diversity, Equality and Inclusion is led by Mr David Gilbert, Dr Ripi Singh and Professor Dr Michele Carboni.
- Sub-group E3 for Certification was proposed by AINDT, discussed by the SIG and put on hold for the moment.

The **Specialist International Group on NDT Reliability** led by Dr Daniel Kanzler met online three times to discuss current trends and challenges for reliability evaluation. Presently, the SIG consists of two active sub-groups and one inactive sub-group. Its current focus is on the technical organisation of the 8th International Workshop on Reliability of NDT/NDE, together with SPIE, which is taking place from 13-14 March 2023 in Long Beach, California, USA. The group is also discussing and supporting different standardisation draft procedures, for example the DIN NA 062-08-28 Group in Germany.

This SIG has set up a sub-group on the effect of **Human and Organisational Factors** on reliability, initially led by Dr Marija Bertovic. ICNDT thanks Dr Bertovic for her work and looks forward to her return after maternity leave. In the meantime, Dr Abdeldjalil Bennecer is acting as Secretary of the sub-group, which is actively developing a guide.

Two new SIGs were registered with ICNDT during 2022:

The **Specialist International Group on Terahertz** (THz) is led by Dr Mira Naftaly and supported by the British Institute of Non-Destructive Testing (BINDT). This group was established in 2021 to promote and advance techniques utilising THz technologies to inspect components, materials and structures and to recommend standardisation and best practice as appropriate. Currently, the group has *circa* 60 members from academia and industry, including major equipment manufacturers and end-users. The group has published a promotional leaflet, titled: 'Terahertz technologies for non-destructive testing and condition monitoring', listing the capabilities and applications of terahertz measurements, which can be found on the ICNDT website at: www.icndt.org/ICNDT-Activities/TerahertzUsers. Further publications are planned for 2023.

The **Specialist International Group on Full Matrix Capture** (FMC) is led by Professor Paul Wilcox and supported by BINDT. Regular meetings were resumed with a hybrid meeting at the 59th Annual BINDT Conference (NDT 2022) in Telford, UK, in September 2022, with the next meeting planned for early 2023. The ongoing development of an open file format for the interchange of FMC data remains a major activity of the group. This work is increasingly relevant in the context of Industry 4.0 and efforts are being made to align with other initiatives for common formats for NDE data, such as that being driven by Professor Stephen Holland at Iowa State University.

Working Group 4 (Communications)

After no physical meetings in the last three years, Mr Shohei Ooka, Chair of ICNDT Working Group 4 (WG4), held a face-to-face meeting in conjunction with the 2022 ASNT Annual Conference on 30 October 2022 in Nashville, Tennessee, USA, with much-appreciated cooperation from the American Society for Nondestructive Testing (ASNT). A very fruitful discussion was had with great progress made regarding ongoing items in the ICNDT Strategic Plan, including the *ICNDT Journal*, ICNDT website and ICNDT membership system.

During the year, exceptional progress was made in WG4. This included ways to provide more systematic and effective communications, with a streamlined approach for members and users with regard to the ICNDT online system. This should prove to be a useful system for Regional Federations and its members that will be developed further this year with consideration from ICNDT and WG4. Additionally, WG4 will keep working on the promotion of the importance of NDT.

The *ICNDT Journal* was published once, Volume 9 Issue 10, in October 2022. WG4 will try to resume the original cycle of three times per year in March, July and November in 2023.

Working Group 5 (Radiation Protection and ADR)

Mr David Gilbert is a member of the International Atomic Energy Agency (IAEA) Working Group on ISEMIR-IR. The Information System on Occupational Exposure in Medicine, Industry and Research (ISEMIR) is an IAEA online web-based information system that aims to optimise occupational radiation protection. It is divided into two topical areas where the radiation protection of workers can be a challenge:

- Interventional cardiology (IC); and
- Industrial radiography (IR).

The ISEMIR WG comprises the following personnel: David Gilbert (UK); Alan Brady (Canada); Charlotte Kaps (Germany); Richard van Sonsbeek (Netherlands); Francisco Da Silva (Brazil); Xiatao Wang (China); and Jizeng Ma, Burcin Okyar, Jun Tan and Xiran Dong (all IAEA).

A hybrid meeting of WG5 was held 16-18 May 2022, the main objectives of which were to review and analyse the results of the global survey and discuss the strategy to promote the ISEMIR-IR system. David Gilbert was assigned Chair of the meeting.

The objectives of the meeting were:

- To review the activities of ISEMIR-IR in 2021.
- To propose the work plan for ISEMIR-IR in 2022.
- To review the questionnaire and approaches for the global survey on ISEMIR-IR in 2022.
- To discuss the upgrade of the ISEMIR-IR system.

The upgrade of the ISEMIR system is a large project within the IAEA and some amendments were proposed regarding the global survey questionnaire and the database. The questionnaire was reviewed and updated, approaches were identified and deadlines were set. Issues with the registration process were discussed and recommendations were made. Promotion remains a challenge; cooperation with experts is needed to promote the system and the action aims to drive progress forward.

ISEMIR is an important part of the activities, but it is not the only subject covered by the WG, which also includes personnel who are not involved in the ISEMIR WG, such as Dr Erik Malta (Netherlands) and Ezio Tuberosa (Italy). More members are invited and if anyone is interested in joining the WG they should contact David Gilbert.

It is hoped meetings will be held at the 13th ECNDT in July 2023 and 20th WCNDT in 2024.

Working Group 6 (Condition Monitoring and Technical Diagnostics)

There were no meetings of Working Group 6 (WG6) in 2022.

Chair's Activities

Dr Sajeesh Babu, ICNDT Chair, attended the online ICNDT Annual Meeting, the online General Assembly on 15 June 2022, the four meetings of the IEC, the meeting of WG1 and several other *ad-hoc* meetings to prepare for these. He participated in the following external activities representing ICNDT:

- The Tenth Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), held in New York, USA, from 1-26 August 2022, where representatives of international and national industry associations and their members, covering a variety of nuclear applications, met to express their collective support for the NPT as a cornerstone of their industries. ICNDT supported the joint statement on NPT and it was published on 12 August 2022.
- The 6th Malaysia International NDT Conference & Exhibition (6th MINDTCE), held 16-17 August 2022, as Guest of Honour, where he delivered the ICNDT Welcome Address and a keynote presentation during the conference.
- The IAEA International Conference on Occupational Radiation Protection, held 5-9 September 2022 in Geneva, Switzerland, where he chaired a session on occupational radiation protection in industrial, research and education facilities and provided a report to the IAEA. This trip was funded and supported by ICNDT.
- The 4th Singapore International NDT Conference & Exhibition 2022 (SINCE 2022), organised by the Non-Destructive Testing Society of Singapore (NDTSS), held in Singapore from 7-8 November 2022.
- The NDE 2022 Conference & Exhibition, held in Gandhinagar, India, from 24-26 November 2022, where he delivered the opening remarks and a keynote speech.
- A meeting with RELACRE on the progress of the 13th ECNDT, where he provided the necessary advice for the upcoming conference and discussed various EFNDT, ICNDT and ISO meetings to be held in conjunction with the conference.

The ICNDT Chair issued a congratulatory message to the Vietnam Association for NDT for their national conference, which was held on 17 December 2022.

ICNDT Officers 2022

ICNDT Chair	Dr Sajeesh K Babu (Singapore)
ICNDT Past Chair	Dr Mike Farley (UK)
ICNDT General Secretary	Mr David Gilbert (UK)
World Conference President	Professor Younho Cho (Korea)
NDT Society to provide Secretariat	The British Institute of NDT (UK)
Treasurer	Mr Gerhard Aufricht (Austria)
Auditors	Mr Douglas J Marshall (Canada) and Dr Werner Schmid (Switzerland)
Chair – ICNDT Certification Executive Committee	Mr Harold Jansen (South Africa)
Chair WG1 – Qualification and Certification	Mr Alexander Mullin (Russia)
Chair WG2 – Membership	Mr João Conte (Brazil)
Co-Chairs WG3 – Research and Education	Professor Younho Cho (Korea) and Dr Anton Erhard (Germany), now replaced by Dr Thomas Wenzel (Germany)
Chair WG4 – Communications	Mr Shohei Ooka (Japan)
Co-Chairs WG5 – Radiation Protection and Safety	Ms Charlotte Kaps (Germany) and Mr David Gilbert (UK)
Co-Chairs WG6 – CM and Technical Diagnostics	Professor Len Gelman (UK) and Mr César Belinco (Argentina)
Chair WG7 – Administration	Dr Mike Farley (UK)

Regional Group Representatives

Africa	Dr Kamal Sahaimi
	Mr Harold Jansen
Asia-Pacific	Dr Norikazu Ooka
	Dr Jong Po Lee
Europe	Mr Fermín Gómez Fraile
	Mr Alexander Mullin
Pan-America	Mr César Belinco, followed by Mr Glenn Tubrett
	Mr Neal Couture

Strategic Planning and Organisation

A draft updated Strategic Plan was due to be presented at the Annual Meeting in 2020. However, before finalisation, the COVID-19 pandemic hit and priorities changed. The IEC has continued to organise ICNDT according to the intent of the Strategic Plan but taking into account the COVID-19 situation.

Changes to the Constitution and Operating Procedures

There have been no changes to the constitution during 2022. Updates to Operating Procedures OP18 and OP20 were approved at the General Assembly in June 2022.

APFNDT (Asia-Pacific)

APFNDT Membership

Regarding the Asia-Pacific Federation for Non-Destructive Testing (APFNDT)'s membership and organisation status, the current members and regional representatives are as follows. To see a full list of members and other regularly updated information for the Asia-Pacific region, visit: www.apfndt.org

Primary Full Member Societies	Sixteen societies
Secondary Full Member Societies	Three societies
Potential Member Societies	Eight societies
Regional Representative: Group One	Western Asia, Central Asia, South Asia – two members
Regional Representative: Group Two	East Asia, South East Asia – four members
Regional Representative: Group Three	Pacific, Oceania – two members

APFNDT Executive Committee (AEC)

President	Dr Norikazu Ooka (JSNDI, Japan)
Vice President	Dr Jong Po Lee (KSNT, Korea)
Past President	Dr B Venkatraman (ISNT, India)
General Secretary	Mr Les Dick (NZNDTA, New Zealand)
Treasurer	Mr Kevin Smith (ASNT, USA)
President of the 16th Asia-Pacific Conference on Non-Destructive Testing (16th APCNDT)	Mr Paul Grosser (AINDT, Australia)
Auditor	Dr Sajeesh K Babu (NDTSS, Singapore)
Secretariat Representative	Mr Shohei Ooka (JSNDI, Japan)

APFNDT Board Members

Regional Representative: Group One (Western Asia, Central Asia, South Asia)	Dr D J Varde (ISNT, India)
	Mr Alexander Mullin (RSNTTD, Russia)
Regional Representative: Group Two (East Asia, South East Asia)	Dr Gong Tian Shen (ChSNDT, China)
	Dr Man Yong Choi (KSNT, Korea)
	Dr Takamasa Ogata (JSNDI, Japan)
Regional Representative: Group Three (Pacific, Oceania)	Professor Chih-Hung Chiang (SNTCT, Taiwan)
	Mr Glenn Tubrett (CINDE, Canada)
	Mr Pranay Wadyalkar (AINDT, Australia)

APFNDT Task Groups

The following seven task groups (TGs) were established in order to carry out specific activities. As per APFNDT official documentation, TGs may be organised by the Board on a short-term or permanent basis. The current TGs are as follows:

TG1 Membership	Mr Kevin Smith (ASNT, USA)
TG2 APFNDT Journal	Professor Jung-Ryul Lee (KSNT, Korea)
TG3 Communications	Mr Shohei Ooka (JSNDI, Japan)
TG4 Education and Training	Dr B Venkatraman (ISNT, India)
TG5 Certification	Mr Paul Grosser (AINDT, Australia)
TG6 Standards	Dr Takamasa Ogata (JSNDI, Japan)
TG7 NDE 4.0	Mr Pranay Wadyalkar (AINDT, Australia)

APFNDT Advisory Group (AG)

Advisory Group members are appointed by the APFNDT President and ratified by the Board, to assist the President and the work of the AEC/Board:

APFNDT President	Dr Norikazu Ooka (JSNDI, Japan)
Advisory Group Member	Professor Ohyang Kwon (KSNT, Korea)
Advisory Group Member	Mr Leslie Dick (NZNDTA, New Zealand)
Advisory Group Member	Dr B Venkatraman (ISNT, India)

Current Activities

2022 was a major step forward for the Asia-Pacific region as numerous face-to-face meetings and events were able to be held. APFNDT met with Mr Sze Thiam Siong, President of the Asian Welding Federation (AWF), and AWF Members on 14 July 2022 in Tokyo, Japan, to further the cooperation that resulted from the Memorandum of Understanding (MoU) signed in 2019. This productive meeting was held as part of AWF's 36th Governing Council and Committee Meetings in conjunction with the 75th International Institute of Welding (IIW) Annual Assembly and International Conference. Members from the AEC, Board and Secretariat also attended both online and in person.

Several in-person events also took place, notably the 6th Malaysia International NDT Conference & Exhibition (6th MINDTCE) from 16-17 August 2022 in Malaysia. The event was organised by the Malaysian Society for Non-Destructive Testing (MSNT) and MSNT President, Dr Ilham Mukriz B Zainal Abidin. Additionally, the 4th Singapore International NDT Conference & Exhibition (SINCE 2022) took place from 7-8 November 2022 in Singapore, hosted by the Non-Destructive Testing Society Singapore (NDTSS), with NDTSS President Dr Sajeesh K Babu presiding. During this conference, APFNDT President Dr Norikazu Ooka delivered a congratulatory address on behalf of APFNDT member societies before attending the scheduled AEC meeting. During SINCE 2022, the AEC was finally able to convene in person on 8 November to discuss general business and prepare for the next General Assembly (GA) and other APFNDT-related meetings. These meetings are due to take place at the upcoming 16th APCNDT from 28 February to 3 March 2023 in Melbourne, Australia, hosted by the Australian Institute of Non-Destructive Testing (AINDT).

Lastly, with regard to APFNDT TG activity, no in-person meetings were able to take place, but the Secretariat facilitated online meetings so communication could be maintained. In particular, TG1: Membership developed a new Operating Procedure for Membership of APFNDT. TG2: Journal is in the initial planning stages of creating an online model for technical articles from the Asia-Pacific region. TG3: Communications distributed the newsletter throughout the year, maintained the website and is still working closely with ICNDT WG4 to develop the online membership system. TG6: Standards distributed ISO 9712:2021 and ISO/IEC 17024:2012 to NDT societies in the Asia-Pacific region based on results from a survey conducted last year as an ongoing APFNDT project. TG7: NDE 4.0 held regular online meetings to discuss reported activity from the ICNDT SIG on NDE 4.0 in order to disseminate information to the Asia-Pacific region.

Future Activities

In the near future, APFNDT plans to hold an online Board meeting in late January 2023 and will continue to make preparations for the 16th APCNDT. Reports from the host society, AINDT, state that preparations are going well and those interested are encouraged to visit the website at www.apcndt2023.com.au

Not only will meetings of the APFNDT AEC, Board and Task Groups be held at the 16th APCNDT, but, as many office bearers have reached their term limits, elections will need to take place to fill those positions. As a result, APFNDT will hold its GA during the conference to formally approve general business such as financials and operating procedures, a change in officers, new members and other items that have arisen since the previous GA in 2021.

APFNDT will continue to hold face-to-face meetings when able to, but online meetings will still be facilitated through the Secretariat for the AEC, Board and TGs. As of now, APFNDT plans to hold in-person meetings at the 20th WCNDT and, as the Korean Society for Non-Destructive Testing (KSNT) is not only the conference organiser but also an APFNDT Full Member, APFNDT will continue to support the society as it makes preparations for the event. Lastly, as part of its ongoing mission to participate in international activities, APFNDT will also continue to work with other organisations, such as ISO/TC 135 standardisation activities and IAEA/RCA's NDT projects, as well as holding further talks with AWF regarding future collaboration.

AFNDT (Africa)

Membership

President	Dr Kamal Sahaimi (Centre National de l’Energie des Sciences et des Techniques Nucléaires, Morocco)
Secretariat	Mr Harold Jansen (SAIW, South Africa)
Founding Members	Algeria, Cameroon, Egypt, Ghana, Democratic Republic of the Congo, Libya, Mauritius, South Africa, Tunisia, Tanzania, Zambia
ICNDT Membership (Active)	Egypt, South Africa
Signatories to Current Constitution (2014)	Algeria, Angola, Cameroon, Egypt, Ethiopia, Ghana, Kenya, Libya, Mauritius, Morocco, Nigeria, South Africa, Sudan, Tunisia, Uganda, Zambia, Zimbabwe
Country (Active) Representation	Cameroon, Kenya, Morocco, Nigeria, South Africa, Sudan, Tunisia <i>There are 54 countries that are potential members</i>
Sub-Regions	<p>North Africa: Tunisia, Morocco, Algeria, Libya, Mauritania, Egypt</p> <p>East Africa: Sudan, Burundi, Djibouti, Kenya, Rwanda, Ethiopia, Eritrea, Somalia, Uganda, South Sudan</p> <p>Central Africa: Cameroon, the Central African Republic, Chad, Democratic Republic of the Congo, Equatorial Guinea, Sao Tomi and Principe, Gabon</p> <p>West Africa: Ghana, Benin, Burkina Faso, Cape Verde, Gambia, Guinea, Guinea-Bissau, Ivory Coast, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo</p> <p>Southern Africa: South Africa, Angola, Botswana, Lesotho, Madagascar, Malawi, Mali, Mauritius, Mozambique, Namibia, Seychelles, Swaziland, Union of Comoros, Tanzania, Zambia, Zimbabwe</p>

Meetings

The African Federation of Non-Destructive Testing (AFNDT) met on 3 February 2022, with nine participants from Cameroon, Morocco, Nigeria, South Africa and Sudan.

Outcomes

- Final draft constitution is pending adoption
- AFNDT ‘renewal’ / rejuvenation agreement
- Participation agreement
- Membership and communication: 54 countries and establish communication channels

Outstanding

- Operating procedures: June 2022
- AGM and election of dignitaries / representatives: July 2022
- Action plan, activities and website: July 2022 – ongoing activities

IAEA - AFRA

- Triangular project: IAEA, Cameroon, SA – Level 3 Workshop (completed 2021).
- National project: Cameroon – authorised qualification body (AQB) and PCB establishment (2023-2026).

Visits in 2022

- Southern African Institute of Welding (SAIW) visit to HYDRAC, Cameroon: approved training body (ATB) renewal and AQB audit.
- SAIW visit to Sudan: new ATB compliance audit.
- IAEA - AFRA delegation to SAIW, 20 to 25 June 2022: workshop and regional project proposal discussion.

Website and Digital Platforms

- A formal AFNDT website is being developed and will be linked to the ICNDT website once completed and approved by the AFNDT Board.
- AFNDT LinkedIn group initiated.
- Meta (Facebook) group to be initiated.
- Database initiated with 63 email addresses.

Strategic Plan Objectives

- National NDT liaison / NDT societies in 54 countries.
- ICNDT MRA Schedule 1 signature.
- At least one ATB per country.
- Sustainable PCB (and AQB) per country.
- ICNDT MRA Schedule 2 registration – via National Accreditation Body or ICEC OP20 process.

EFNDT (Europe)

During 2022, the European Federation for Non-Destructive Testing (EFNDT) carried out many different actions, despite the situation facing all societies due to the COVID-19 pandemic, Brexit and the Russia-Ukraine war. The Board of Directors (below) met several times online during the year and restarted face-to-face meetings from September.

During the 13th ECNDT, taking place from 3-7 July 2023 in Lisbon, Portugal, EFNDT elections will take place.

Board of Directors	
President	Mr Fermín Gómez Fraile (Spain)
Vice President	Mr Alexander Mullin (Russia) <i>(stood down 20/12/2022 at the request of RSNTTD until the Russia/Ukraine conflict is solved)</i>
Treasurer	Mr René Klieber (Switzerland)
Directors	Dr Thomas Wenzel (Germany)
	Mr Frédéric Schaditzki (France)
	Mr Peter Fish (Switzerland)
	Professor Dr Michele Carboni (Italy)
	Dr Pavel Mazal (Czech Republic)
	Mr Bento Ottone Alves (Portugal)
	Mr David Gilbert (UK)
Co-opted Members (non-voting)	
	Mr Gerhard Aufricht (Austria)
	Mr René Klieber (Switzerland)
Ex-Officio Members (non-voting)	
General Secretary	Dr Emilio Romero (Spain)
Past President	Professor Peter Trampus (Hungary)
13th ECNDT President	Mr Bento Ottone Alves (Portugal)
EFNDT Certification Executive Committee (ECEC) President	Mr Alexander Mullin (Russia) <i>(stood down 20/12/2022 at the request of RSNTTD until the Russia/Ukraine conflict is solved)</i>
Auditor	Mr Casper Wassink (Netherlands)

EFNDT Matters

EFNDT has redefined the ten Working Groups and three Forums and these have started their work through virtual meetings and conferences. They are as follows:

- WG1 – Education
- WG2 – Radiation Protection and ADR
- WG3 – Condition Monitoring
- WG4 – Laboratory Accreditation
- WG5 – NDT for Public Safety and Security
- WG6 – NDT on Additive Manufacturing (two meetings)
- WG7 – Failure Analysis (Risk Analysis) (three meetings together with ICNDT SIG)
- WG8 – Human Factors
- WG9 – Ethics (internal work with some associations)

- WG10 – NDT 4.0 (eight meetings, one conference hosted by DGZfP and an international conference planned in Spain for aerospace NDT (AEROEND 4.1)). Joint with ICNDT SIG.
- Forum for European National Aerospace NDT Boards (NANDTBs) (four meetings and development of EN 4179)
- Forum for Railway Industries
- Forum for Marine (preparing underwater inspection specifications; contact with the International Association of Classification Societies (IACS)).

Additionally, a Working Group with the European Welding Federation (EWF) has been reactivated to complete the European NDT Engineer proposal (two meetings in 2021).

An agreement has also been reached with the TIC Council Confederation of Inspection and Certification Organisations to work together on WG6 and WG10 matters.

Projects and Actions

Robotics for Inspection and Maintenance (RIMA) is a four-year EU Horizon 2020 project that aims to establish a network of 13 digital innovation hubs (DIHs) on robotics, sharing best practices and providing services to facilitate the uptake of inspection and maintenance technologies. The RIMA network encompasses leading research organisations supporting one DIH per region, aligned with regional policies and industry sectors and sectorial associations that will build a bridge between end-users and industries. EFNDT is in the process of establishing whether or not its members wish to participate.

Other Matters

The EFNDT General Assembly has approved the update of its statutes in two meetings, one in English and the other in French as required by the Belgian government. These statutes were approved by a Belgian lawyer and a Belgian notary in Brussels at the beginning of December.

Brexit

During the EFNDT Board of Directors (BoD) meeting, the situation due to Brexit was analysed in relation to the European Pressure Equipment Directive (PED) 2014/68/EU and the new requirements of the United Kingdom Accreditation Service (UKAS). The British government has approved the extension of EU NDT certificates until 2024/2027.

ECNDT

The Organising Committee of the next ECNDT had several meetings with the President and Secretary of EFNDT and recommended to the BoD that the 13th ECNDT should be rescheduled to 3-7 July 2023 in Lisbon, Portugal, due to the postponement of the 20th WCNDT and after consultation with the Lisbon Exhibition Centre and the professional conference organisers, sponsors and exhibitors. This recommendation was approved by the BoD.

On 15 and 16 December 2022, there was a visit and several meetings with ICNDT and ISO SC 135 in Lisbon (attended by Dr Sajeesh Babu, Dr Norikazu Ooka, Mr Fermin Gomez Fraile, Dr Emilio Romero and Mr Bento Ottone Alves) to define the needs for meetings during the 13th ECNDT and the locations in which to hold such meetings.

Russia-Ukraine War

On 27 December 2022, the BoD received the resignation of Mr Alexander Mullin (EFNDT Vice President and Chair of ECEC) from these positions until the end of the Russia-Ukraine war.

TIC Council agreement

EFNDT is preparing an agreement with the TIC Council to obtain administrative support in Brussels.

Mr Fermín Gómez Fraile
EFNDT President

PANNDT (Pan-America)

Current members of the Pan-American Federation for Nondestructive Testing (PANNDT) are as follows:

Argentina	AAENDE	Asociación Argentina de Ensayos No Destructivos y Estructurales
Bolivia	ASBOSENDIC	Asociación Boliviana de Soldadura, Ensayos No Destructivos, Inspección y Corrosión
Brazil	ABENDI	Associação Brasileira de Ensaio Não Destrutivos e Inspeção
Canada	CINDE	Canadian Institute for Non-Destructive Evaluation
Chile	ACHISEND	Asociación Chilena de Soldadura Inspección y Ensayos no Destructivos
Colombia	ACOSEND	Asociación Colombiana de Soldadura y Ensayos No Destructivos
Costa Rica	–	Instituto Tecnológico de Costa Rica
Ecuador	ESPOL	Escuela Superior Politecnica del Litoral
USA	ASNT	American Society for Nondestructive Testing
Mexico	IMENDE A.C.	Instituto Mexicano de Ensayos No Destructivos, A.C.
Mexico	AMEXEND A.C.	Asociación Mexicana de Ensayos no Destructivos Asociación Civil
Peru	APEND	Asociación Peruana de END
Uruguay	AENDUR	Asociación Uruguaya de Ensayos No Destructivos

Meetings were held during the 2022 ASNT Annual Conference that took place in Nashville, Tennessee, USA, from 31 October to 3 November 2022. A new Board was elected in as follows:

President	Mr Glenn Tubrett (CINDE, Canada)
Vice Chair	Mr David Bajula (ASNT, USA)
Treasurer	Mr Antonio Aucilino (ABENDI, Brazil)
Secretary	Mr Jorge Amsler (AAENDE, Argentina)

Discussions centred on the support of some entities in Latin America for the structuring of their NDT societies and the review of the Terms of Reference of the Federation. The PANNDT Strategic Plan is being reviewed by the Board.

The next PANNDT Conference is scheduled for June 2025, and will be held in Niagara Falls, Ontario, Canada; see: <https://www.panndt.org/panndtconference/>

Certification of NDT Personnel – MRA, PCB and EQB

Multilateral Recognition Agreement (OP19)

- There are currently 47 signatories to Schedule 1 of the MRA. See: www.icndt.org/OP19%20Schedule%201_MRA%20Master%20Register%2007.05.2022.pdf
- There are currently 21 PCBs registered under the MRA Schedule 2. See: https://www.icndt.org/OP19%20Schedule%202_MRA%20Master%20Register%2010.01.2023.pdf

Personnel Certification Body Compliance Assessment (OP20)

- China re-registered under OP20 in 2021.

Examination Question Bank

The ICEC has developed an online delivery system for the ICNDT Examination Question Bank (EQB). This online EQB has been demonstrated to the current EQB users and the new delivery method is now being trialled by volunteer PCBs. The ICEC has been approached by additional PCBs showing continued demand for the EQB, both in its current form and the future online version.

ICNDT Guide to Qualification and Certification of Personnel for NDT

The update of the *ICNDT Guide to Qualification and Certification of Personnel for NDT*, last published in 2016, is well underway, led by Dr Mike Farley. The update takes account of the revision of ISO 9712, the work of ICNDT WG1, changes in Europe due to Brexit, changes in the American Society of Mechanical Engineers (ASME) rules relating to personnel certification and new data from PCBs around the world. It is hoped the new version will be published in time for the 13th ECNDT in July 2023.

ISO/TC 135

The last ISO/TC 135 Plenary and SC meetings were held online in October 2021. After those meetings in 2021, ISO/TC 135-related SC and WG meetings were held online in 2022 to continue the development of related standards. One recent notable point of interest from ISO/TC 135 is that since the publication of ISO 9712 in December 2021, ISO/TC 135/SC 7 has already begun preparations to discuss the next revision of ISO 9712.

Following on from the above discussions, ISO/TC 135 Plenary, ISO/TC 135/SCs, WGs and *ad-hoc* group physical meetings will be held from 5-9 July 2023 in Lisbon, Portugal, in conjunction with the 13th ECNDT. The ISO/TC 135 Plenary meeting will be held on 9 July 2023 with the new Chair, Dr Takamasa Ogata, who was appointed on 1 January 2021, presiding for the first time, after Dr Norikazu Ooka stood down after his term of office.

Lastly, acting as the ICNDT representative and liaison member, respectively, for ISO/TC 135, Dr Mike Farley and Dr Sajeesh K Babu have also been participating.

Website/Journal/Publications

The ICNDT Secretariat has continued to provide updates to members through the website and the ICNDT Journal, issued in October 2022.

ICNDT is grateful to the Japanese Society for Non-Destructive Inspection (JSNDI) for providing the platform for the ICNDT website and to BINDT, especially Zoe White and Cindy Bailey, for their support to the committees and for the preparation of the *ICNDT Journal*, Annual Report and other published documents.

Finance

The audited financial report for 2022 and the budget for 2023 are shown in the following pages.

Acknowledgements

ICNDT wishes to thank its Executive Committee, Committees and Working Groups for their efforts during 2022 and acknowledges the support of the Secretariat provided by BINDT. Thanks are also reiterated to the 20th WCNDT Organising Committee, particularly Dr Dong-Jin Yoon, Chair of the Conference Organising Committee, and Professor Younho Cho, WCNDT President, for their efforts in dealing with the complexities of organising and rearranging the 20th WCNDT.

ICNDT also thanks JSNDI for maintaining the ICNDT website. The Chair personally thanks Dr Mike Farley, who has coordinated and compiled the contents of the Annual Report. All volunteers working for their NDT societies have again faced extra challenges this year and their work is much appreciated. It is vital to continue to create a safer world through the wider use of NDT and diagnostic technologies.

Dr Sajeesh K Babu
Chair, ICNDT

Financial Report – Balance at 31.12.2022		
	€	€
	Income 2022	Expenditure 2022
Opening balance	138,572.95	
Donation from Austrian Chamber of Commerce	500.00	
Donation from WCNDT	0.00	
Membership fees (<i>new fee structure, including EFNDT fees 2021</i>)	30,750.00	
Interest from bank account no 290-317-99501	15.28	
PCB CA service (OP20)	9,575.00	
MRA service (OP19)	0.00	
EQB product: application fees (OP23)	7,500.00	
EQB update fees (OP23)	0.00	
Meeting expenses/Go to meetings		3,415.64
Cost of bank account no 290-317-99501		188.21
Bank expenditure for incoming fees		880.27
Printing costs		0.00
Office costs (<i>insurance, various</i>)		3,324.91
PCB CA service costs: system administration (OP20)		1,168.00
MRA/PCB: auditor payment, administration (OP19)		9,348.86
EQB service costs: administration, overheads, third-party services (OP23)		1,688.00
Professional service		6,760.00
Preparation of ICNDT monographs		0.00
Supplies (<i>ICNDT badges, flags, etc</i>)		0.00
Miscellaneous (<i>shipping, conference calls</i>)		0.00
Website upgrade		0.00
Totals	186,913.23	26,773.89
Allocation to reserves		160,139.34

Ing Gerhard Aufricht (Treasurer)

Vienna, 05.01.23

Financial Report – Draft Budget 2023

	€	€
	Income 2023	Expenditure 2023
Opening balance	160,139.34	
Donation from Austrian Chamber of Commerce	500.00	
Donation from WCNDT	0.00	
Membership fees	22,800.00	
Interest from bank account no 290-317-99501	30.00	
PCB CA service (OP20)	5,200.00	
MRA service (OP19)	750.00	
EQB product: application fees (OP23)	7,500.00	
EQB update fees (OP23)	500.00	
Meeting expenses/Go to meetings		7,760.00
Cost of bank account no 290-317-99501		300.00
Bank expenditure for incoming fees		1,000.00
Printing costs		2,000.00
Office costs (<i>insurance, various</i>)		2,000.00
PCB CA service costs: system administration (OP20)		2,000.00
MRA/PCB: auditor payment, administration (OP19)		9,400.00
EQB service costs: administration, overheads and third-party services (OP23)		6,400.00
Professional service		3,500.00
Preparation of ICNDT monographs		0.00
Supplies (<i>ICNDT badges, flags, etc</i>)		1,000.00
Miscellaneous (<i>shipping, conference calls</i>)		2,000.00
Website upgrade		0.00
Totals	197,419.34	37,360.00
Allocation to reserves	160,059.34	
Pending costs 2024: Website €25,000.00		

Ing Gerhard Aufricht (Treasurer)

Vienna, 05.01.23

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