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AINDT

INDUSTRIAL EYE

THE OFFICIAL JOURNAL OF THE AUSTRALIAN INSTITUTE FOR NON-DESTRUCTIVE TESTING

RADIOGRAPHY ▪ ULTRASONICS ▪ EDDY CURRENT ▪ PENETRANT ▪ MAGNETIC PARTICLE
VIBRATION ANALYSIS ▪ LUBRICATION ANALYSIS ▪ THERMOGRAPHY ▪ ACOUSTIC EMISSION

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President's Message

Welcome to the latest edition of the *Industrial Eye*, our bimonthly journal for the Australian Institute for Non-destructive Testing (AINDT).

Joshua Morris

This edition includes regular articles and updates from the Institute, as well as technical articles on topics such as Eddy Current Testing System Design for Non-Magnetic Hollow Tube Inspection, Innovative Phased Array, Assessment of FRP Composites in Water and Wastewater System Infrastructure, and Thermography.

As we advance through 2025, both the Board of Directors and the Federal Office have been actively engaged in initiatives that will shape the future of our Institute. We are continuing to implement the recommendations from last year's governance review, which includes the establishment of a Constitution Review Committee to thoroughly assess and recommend updates to our constitution and supporting procedures.

This Committee comprises at least one member from each state branch to ensure that through the state representatives all members are represented.

The Committee will begin its work in the coming weeks and provide recommendations for the board to implement changes to the institute's constitution and procedures. The ultimate goal is to strengthen the institute, clarify objectives and responsibilities, and eliminate ambiguity.

Preparations for the upcoming conference in Newcastle are gaining momentum. The combined efforts of our CEO, the Federal Office, and the New South Wales Branch are focused on making this event a highlight in the non-destructive testing (NDT) and condition monitoring (CM) calendar, taking place in the vibrant city of Newcastle this November.

In the coming months, the Institute will be seeking conference sponsors, exhibitors, and presenters of technical papers.

The conference is scheduled for 18 to 20 November this year at the Newcastle Town Hall. There will be numerous opportunities for members to volunteer in the preparation and running of the conference, and I encourage you to contact the Federal Office if you are interested in contributing.

The Certification Board has launched a working group focused on expediting our alignment and compliance with the latest ISO 9712:2021 certification standard.

The working group consists of experienced NDT personnel, including business owners, service providers, and training and qualifying bodies, and was formed to expedite the transition to the 2021 revision.

We understand that some members see opportunities for improvement in the certification process under the new guidelines, and we not only appreciate this feedback but encourage continued input regarding any difficulties encountered with current or future systems. With this initiative, we aim to streamline the transition to the most current edition of the certification standard, improve performance, integrity, and processing speed, and ensure ongoing excellence in AINDT certification.

While the Federal Office remains busy processing a high volume of certifications, we are still in the process of recruiting a suitable Certification Manager. In the interim, we deeply appreciate the support of our temporary engagements, particularly our dedicated volunteer members, whose contributions are invaluable.

The establishment of the Constitution Review Committee and the ISO 9712:2021 working group attests to this. Volunteers remain the lifeblood of our Institute, and while it is impossible to thank everyone individually, we are constantly mindful of the incredible support they provide.

Warm regards,
Joshua Morris,
President Australian Institute for Non-destructive Testing

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Design Alarna O'Connell

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INSTRUCTIONS TO AUTHORS OF TECHNICAL ARTICLES

Manuscripts should be submitted in electronic form:
1. in word
2. typed with single spacing
3. with figures as tif or jpeg files at better than 300dpi

Manuscripts should include:
1. symbols and abbreviations conforming to recognised standards; metric units (SI)
2. references listed, after the text, in the order in which they occur in the paper
3. references indicated in the text by arabic numerals in square brackets
4. tables and figures numbered separately but consecutively with Arabic numerals and brief, descriptive titles
5. a reference in the text to all tables and figures
6. graphs and diagrams made with lines of sufficient thickness to reproduce well
7. titles and address of authors

Procedure for submission of manuscripts:
1. articles should be sent to: journal@aindt.com.au
2. manuscripts will be submitted to referees who will remain anonymous
3. reprints of each paper will be supplied free to the author

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A Message from the CEO

Political Engagement

Stuart Norman

With a federal election to be held in the coming months, the AINDT has been reaching out to a number of politicians to make them aware of the Institute and the broader industry. Specifically, we've focused our attention on the Coalition's Australia's Energy Future policy which proposes the construction of new nuclear power facilities and increased gas infrastructure.

Given that the majority of the general public has never heard of non-destructive testing or condition monitoring, it shouldn't have surprised me that those in Canberra have never heard of us either. What did surprise me was that those who are developing policy—particularly energy policy—have not gone into detail on how key pieces of infrastructure are built and maintained safely.

We will continue to engage with key decision makers in Canberra prior to the election in a bid to influence key policy decisions.

In addition to our efforts to engage with those in Canberra, I have been invited to participate in the NDT Taskforce for AUKUS. Both the Australian Defence Force and the South Australian Government are working on understanding the specific training needs, workforce and facilities required to see the submarines built and maintained. As anticipated, the issue of certifications has been discussed and whether technicians should be required to have ASNT, AINDT or both certifications.

We'll continue to participate as an active member of the NDT training solution as it relates to AUKUS and the Australian Defence Force as a whole.

JAS-ANZ Audit

The AINDT undertook our now annual JAS-ANZ (Joint Accreditation System of Australia and New Zealand) audit in February. This was the first audit conducted for a couple of years and included some added scrutiny due to some circumstances that have occurred.

The audit was extremely thorough and concluded that, overall, our certification is robust and meets the requirements of ISO 9712:4014 Non-destructive testing — Qualification and certification of NDT personnel. There are always areas where a certification scheme can improve, but I'm confident that the improvements suggested can be implemented in the coming months.

We're Employing

Over the past six months we have continued to see the number of certification applications increase. While we can budget for renewals and re-certifications it is difficult to forecast how many initial applications we may receive in any year.

As such, the AINDT Federal Office in Melbourne is seeking to employ a Certification Assistant to join our team. This may be either a part-time or casual position tailored for the right person or people.

If you are a motivated and detail-oriented person or know someone who is, please contact the Federal Office. This is an excellent opportunity for someone who may be looking for part-time work, or an opportunity to join a great industry.

AFL and NRL Footy Tipping

While the Federal Election is not far away, the footy season (no matter which code you follow) is even closer. The AINDT is again holding an AFL and NRL footy tipping competition with prizes to be awarded to the place getters in both competitions.

All members should have received an email with details on how to join. However you may work for a business

that is a member and not received the information on how to participate.

This year we have changed platforms and are using ESPN Footy Tips (**www.footytips.com.au**). Our two competitions can be found there, called AINDT AFL 2025 and AINDT NRL 2025.

Good luck and let's see how many people we can get to join before the seasons start.

AINDT Portal

The Federal Office is looking to improve the certification and membership portal to make it more user friendly.

The current system has serviced the organisation well, but with an ever growing number of certifications to process, we are mindful that further improvement is needed and should be made.

In particular, we are looking to provide better information for applicants when submitting an application and to reduce the processing time. This means that we will endeavour to make it as clear as possible what is required from applicants to move their application forward.

These improvements will be gradual but will start with greater information being provided to potential applicants when undertaking their training and exams.

Following this, there will be improvements to the portal application process to implement required fields, particularly in relation to the documentation required to process an application.

Regards
Stuart Norman

AINDT SUMMIT 2025

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THE POWER OF INSPECTION

18-20 NOVEMBER 2025

NEWCASTLE CITY HALL

MORE INFORMATION TO FOLLOW

federaloffice@aindt.com.au 03 9486 9267 aindt.com.au

Member List

February 2025

The AINDT is a national peak body that promotes the professional practices of non-destructive testing and condition monitoring personnel. Our mission is to provide members, industry and the community with independent and professional service in relation to the science and practice of non-destructive testing.

Through the work of our state branches and federal office, AINDT is committed to fostering a community of professionals and organisations dedicated to the fields of non-destructive testing, engineering, and materials and quality testing.

We offer a tiered membership structure, inviting businesses to enhance their professional standing and industry influence by becoming a Company, Corporate, or Sustaining member. Our memberships unlock a suite of benefits, including marketing opportunities, heightened support, streamlined staff certification management, and much more.

AINDT would like to thank the companies below for their valued support.

SUSTAINING MEMBERS

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D R May Inspections
EnerMech
SRG Industrial Pty Ltd
Intertek

SUPPORTING MEMBERS

Chevron

CORPORATE MEMBERS

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Hofco Oilfield Services
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AXT Pty Ltd
Barry Evans Lifting World
Bluescope Steel (Port Kembla)
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Magnetic Analysis Aust Pty Ltd
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NDT Equipment Sales Pty Ltd
Nobel Engineering Services
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RPG Australia
Russell Fraser Sales Pty Ltd
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QLD

AXS Pty Ltd (Mackay
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M-Test Mackay Pty Ltd
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VIC / TAS

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Defence Science and Techology Organisation (DSTO - Fishermans Bend)
Gippsland NDT Services Pty Ltd
LMATS Pty Ltd (Williamstown)
NATA
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WA

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ICM Training Solutions
Integrity Engineering Solutions
MJ Engineering Inspection Services (Welshpool)
NDT Instruments Pty Ltd
Vertech
Optiflow Pty Ltd
Portable Scientific Pty Ltd
Weld Integrity
Wood - Asset Performance Optimisation

Membership Registrar Update

Unlock the Benefits of AINDT Membership in 2025

Becoming a member of the Australian Institute for Non-Destructive Testing (AINDT) is more than just joining an association—it's about gaining access to industry insights, building valuable connections, and advancing your career or business in the NDT and condition monitoring industry.

Whether you're an individual professional, a student, or a company, AINDT membership offers a wide range of exclusive benefits designed to support your growth, development, and success.

The Value of Industry Association Membership

Membership in an industry association or peak body like AINDT provides crucial advantages that can accelerate your career or business:

- **Professional Development** Stay up to date with industry standards, innovations, and best practices.
- **Networking Opportunities** Connect with peers, mentors, and industry leaders at events and seminars.
- **Industry Representation** Have your voice heard on important issues and contribute to shaping industry standards.
- **Reputation Building** Enhance your professional profile with membership in a respected industry body.

Why Join AINDT in 2025?

As the peak industry body for NDT and CM professionals in Australasia, AINDT offers a suite of benefits tailored to meet the needs of individuals, students, and companies. Here's what you gain by becoming a member:

- **Industry Insights and Resources** Receive six editions of the AINDT Journal annually, along with digital magazines, technical books, and access to theoretical materials.
- **Exclusive Discounts** Enjoy discounted certification and renewal fees, plus savings on advertising options and AINDT events.
- **Online Advertising Opportunities** Benefit from free advertising in the Technical Experts Directory, free job postings, and discounted online advertising.
- **Technical Support** Access on-site and off-site technical advice, including consultations with AINDT experts (available for Corporate and Sustaining members).
- **Networking and Involvement** Connect with peers through AINDT Branch social events and gain eligibility to participate in your local State Branch Council.

- **Career Development** Take advantage of staff certification control services, expiration notifications, and assistance with maximising your membership benefits.
- **Corporate Benefits** Companies can access a wide range of business development opportunities, from staff certification control services to exclusive corporate discounts and consultation on industry standards.

Membership Options for Everyone

AINDT offers membership categories to suit all needs:

- **Individual Memberships** (including Student and Retired) – Perfect for professionals looking to grow their industry knowledge and connections.
- **Corporate Memberships** Ideal for companies wanting to increase exposure and provide employees with certification support.
- **Supporting and Sustaining Memberships** Designed for larger companies seeking leadership opportunities and a stronger voice in the industry.

With so many opportunities for learning, networking, and advancing your career or business, there has never been a better time to join AINDT. Membership not only connects you with the industry's best resources and experts but also empowers you to help shape the future of NDT and CM in Australasia.

Take the next step—become an AINDT member in 2025 and unlock a world of benefits!

Join now: **www.aindt.com.au/Membership**

Craig Taylor
AINDT Membership registrar

NDT Certification Board Update

The AINDT NDT Certification Board (CB) held the first meeting of 2025 on 12 February. We would like to report back to the membership on some of the topics that were discussed.

Structured Credit System

The NDT CB Applications Committee has found the current Structured Credit System (SCS) system and guidance has caused frustration for both candidates and assessors, particularly the Level III SCS. With this in mind, we are updating the SCS guidance, specifically for Level III re-certifications.

There has always been a requirement to provide evidence to support claimed points, and it often takes weeks or months for this evidence to be supplied. We will now move to include the requirement for sample pieces of evidence to support claimed points. We do not need, or want, full reports or procedures. We understand client confidentiality and do not want to handle, view or store confidential data.

For a Level II recertification, sample evidence could be the front page of an NDT Report, with the candidate's name included in the list of performing technicians.

For a Level III recertification, sample evidence could be the front page of an NDT Procedure that the candidate has developed or reviewed. Any client names or identifiers should be blanked out. Andrew Kennedy is looking after this and is very willing to help.

Applying for AINDT Certification from other ISO 9712 Schemes

The CB wish to remind candidates transferring from other ISO 9712 schemes, to apply before their certifications expired. The NDT CB does not accept applications for transfer from other schemes after the expiration, or if a practical examination is a requirement for certification. The practical examination should be completed before transferring, or at the very least, be booked in with one of our approved AQBs. AINDT is under no obligation to recognise expired certification from other certification schemes. Our core responsibility is to look after our own members.

ISO 20807 Non-Recognition

The NDT CB wish to remind applicants for ISO 9712 UT-2 certification that training hours from ISO 20807 limited UT certification will not be credited to ISO 9712 certification.

Radiation Safety Training is Not the Perquisite to ISO 9712 RT-2 Certification

Again, we wish to remind candidates that are looking to undergo ISO 9712 RT-2 certification that radiation safety training undertaken for state user licences is not necessarily equivalent the current prerequisite for certification.

We appreciate that some radiation safety courses may contain general radiography learning material that may be similar to learning outcomes from the current prerequisite training syllabus. However, the onus is not on the NDT CB to accept any general radiography learning hours undertaken during radiation safety training that is not specified as a prerequisite in the AINDT Guide to Certification.

It is the candidate's responsibility to provide suitable evidence. This evidence may include a syllabus cross reference document or gap analysis by a training provider that confirm the course meet the current AINDT certification prerequisite. Only then will the NDT CB consider crediting any training hours towards ISO 9712 certification that are not explicitly stated on a training certificate demonstrating alignment with the AINDT's prerequisite training requirements for ISO9712 RT Level 2 certification.

Non-Destructive Testing and Condition Monitoring Certification

AINDT is focused on promoting and maintaining high standards in the field of non-destructive testing (NDT) and condition monitoring (CM) in Australia.

Our certification programs are designed to assess and validate the competence of individuals in performing NDT and CM techniques according to best practices and industry standards like ISO9712, ISO20807, ISO17024 and ISO18436.

AINDT Certification

AINDT Certification demonstrates that you have the necessary knowledge and skills to carry out inspections, testing, and analysis to detect flaws or defects in materials and structures without causing damage.

Our certification is recognised and respected within the industry and provides assurance of an individual's proficiency in NDT and CM methodologies.

As the primary Certification Body in Australia for the NDT and CM industry, we aim to streamline the certification process, ensuring it is quick and hassle-free for individuals in various scenarios. Whether you are:

- applying for certification
- renewing your certification
- seeking re-certification
- or international certification

We are dedicated to facilitating the process and making it accessible for all. All applications for AINDT Certification can be completed via the AINDT Portal: https://portal.cbdb.aindt.org/login.php

AINDT Certification Board

AINDT is well recognised internationally and has achieved third-party JAS-ANZ accreditation for its certification scheme to meet the requirements of ISO17024. It was one of the first countries in the world to achieve this when, in 2005, the latest version of ISO9712 was issued.

Consequently, AINDT has played a leading role in the harmonisation of NDT personnel certification schemes in the south-east Asia region through the International Atomic Energy Agency's Regional Cooperation Agreement (RCA).

AINDT has a Mutual Recognition Agreement with the European Federation of Non-Destructive Testing (EFNDT) which recognises, in principle, the qualifications of personnel certified by AINDT and members of EFNDT.

In addition, personnel who seek endorsements for nozzle and node connections can also seek recognition through an agreement with the British Institute for Non-Destructive Testing to gain approval to inspect complex weld geometries in accordance with the European Union's Pressure Equipment Directive (PED).

The Certification Board provides examinations through a network of Authorised Qualifying Body's and through its own examination centres throughout Australia. The number of disciplines certified (methods/sectors) are quite diversify.

For further information, or to apply for certification, visit: **aindt.com.au/certification**

Condition Monitoring Training Centres

Unlock the future of your career with top-tier condition monitoring training from trusted providers.

These training centres have earned the endorsement of AINDT, aligning perfectly with the national syllabi approved by the AINDT Certification Board. This ensures that you receive the highest standard of education and training.

To maximise your learning experience, AINDT recommends obtaining a copy of the training module—either directly from the training provider or by downloading it from the AINDT website. This will ensure you are well-prepared for your course.

For those seeking certification, it's crucial to successfully complete the specified training program and required training hours outlined in ISO18436. This is essential for achieving certification in your desired conditioning monitoring method, category, and industry sector.

All examinations are conducted by the AINDT.
For exam dates and further details, please contact AINDT via: federaloffice@aindt.com.au.

Elevate your skills and advance your career with the industry's best training and certification programs.

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W: **irta.com.au**

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T: 03 9810 3348
E: claudine.evans@unimelb.edu.au
W: **unimelb.edu.au**

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A: Level 3, 171 Collins Street, Melbourne 3000
T: 08 6314 2000 or (08) 6314 2280
E: svt.bu.training@woodplc.com
W: **woodplc.com**

Western Australia

ICM Training Solutions
A: 45 Delawney Street, Balcatta 6021
T: 0419 993 233
E: rainingacademy@icmt.com.au
W: **icmt.com.au**

SRG Training Academy
A: 109 Bannister Road, Canning Vale 6155
T: 08 9232 0300
E: trainingacademy@srgglobal.com
W: **srgglobal.com**

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W: **woodplc.com**

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W: **mdiaustralia.com**

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W: **mcsturbo.com**

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A: Level 20, 127 Creek Street, Brisbane 4000
T: (08) 6314 2000 or (08) 6314 2280
E: svt.bu.training@woodplc.com
W: **woodplc.com**

Authorised Qualifying Bodies

AQBs are authorised to offer AINDT-approved training and initial and recertification examinations in any Australian state, at any time throughout the year.

The AINDT also conducts scheduled examination rounds twice yearly, with dates advertised in The Industrial Eye and the AINDT e-newsletter.

While the AINDT strives to notify certificate holders of impending certification expirations, it remains the responsibility of the certificate holder to initiate the renewal and recertification process before their certification expires. Please note that late fees apply to overdue certification applications.

South Australia

Kuzer Technical
T: 1300 199 086
E: info@kuzer.com
W: **kuzer.com**

NDT methods, levels, and industry sectors offered:
- Magnetic Particle Level 1, 2 and 3 Multisector (ISO 9712)
- Dye Penetrant Level 1, 2 and 3 Multisector (ISO 9712)
- Ultrasonics Level 1, General Engineering (ISO 9712)
- Ultrasonics 2 and 3 Welds (ISO 9712)
- Phased Array Level 2 and 3 Multisector (ISO 9712)
- Time Of Flight Diffraction Level 2 and 3 Multisector (ISO 9712)
- Radiographic Testing Level 2 and 3 Welds (ISO 9712)
- Visual Testing Level 1 and 2 Multisector (ISO 9712)
- Eddy Current Level 1, 2 and 3 Multisector (ISO 9712)
- Level 3 Basic Exam Prep (ISO 9712)
- OCTG drill pipe inspection
- Material Science in NDT – Multisector
- NDT for Managers & Engineers
- Radiation Safety (exceeding the syllabus of national module EA612)

Victoria

ATTAR
T: 03 9574 6144
E: training@attar.com.au
W: **attar.com.au**

NDT methods, levels, and industry sectors offered:
- Computed and Digital Radiography 2, 3
- Ultrasonic Testing 1,2,3 Welds, Casting, Wrought,
- Aerospace, Thickness
- Radiographic Testing 2,3 Welds, Casting, Aerospace
- Magnetic Particle Testing 1,2,3 Multisector, Aerospace
- Penetrant Testing 1,2,3 Multisector, Aerospace
- Eddy Current Testing 2,3 Multisector, Aerospace
- Magnetic Flux Leakage 2
- Tank Bottom Testing
- Phased Array levels 2 and 3 Ultrasonics 2 Multisector
- Visual/Optical Testing 2 Multisector
- Time of Flight Diffraction (TOFD) levels 2 and 3 Welds
- Heat Treatment
- ISO 9712 UT Level 2 Corrosion/Erosion Detection and Mapping (CDM)

Western Australia

ATTAR
T: 03 9574 6144
E: training@attar.com.au
W: **attar.com.au**

NDT methods, levels, and industry sectors offered:
- Computed and Digital Radiography 2, 3
- Ultrasonic Testing 1, 2,3 Welds, Casting, Wrought,
- Aerospace, Thickness
- Radiographic Testing 2,3 Welds, Casting, Aerospace
- Magnetic Particle Testing 1,2,3 Multisector, Aerospace
- Penetrant Testing 1,2,3 Multisector, Aerospace
- Eddy Current Testing 2,3 Multisector, Aerospace
- Magnetic Flux Leakage 2
- Tank Bottom Testing
- Phased Array 2, 3 Ultrasonics 2 Multisector
- Visual/Optical Testing 2 Multisector
- Time of Flight Diffraction (TOFD) 2, 3 Welds
- Heat Treatment
- ISO 9712 UT Level 2 Corrosion/Erosion Detection and Mapping (CDM)

SRG Training Academy
T: 08 9232 0300
E: trainingacademy@srgglobal.com
W: **srgglobal.com**

NDT methods, levels, and industry sectors offered:
- Ultrasonic Testing 1,2 Welds
- Magnetic Particle Testing 1,2 Multisector
- Penetrant Testing 1,2 Multisector
- Phased Array Ultrasonic Testing 2 Multisector

Queensland

Protecs Global
T: 07 3492 9213
E: hamed.madani@protecsglobal.com.au
W: **protecsglobal.com.au**

NDT methods, levels, and industry sectors offered:
- Ultrasonic Testing 1 (General Engineering) 2 Welds
- Magnetic Particle Testing, 2 Multisector
- Penetrant Testing, 2 Multisector

South Australia Branch Update

Changes to the South Australia Council

We are pleased to welcome Nick Hart as the new Federal Councillor, taking over from Jordan Beinke. We extend our sincere thanks to Jordan for his valuable contributions and dedication during his time in the role. Nick brings a wealth of experience to the council, and we look forward to his leadership and advocacy on behalf of the South Australia Branch at the national level.

Luke Jones and Tyson Jenke will continue their service on the council, providing experience and continuity as we progress our initiatives for 2025.

In addition, Simon Wilding has put his hand up to serve on the AINDT Constitutional Committee, a crucial role that helps shape the governance and future direction of the AINDT.

First Council Meeting for 2025

The South Australia Branch Council held its first meeting for 2025 on 3 February, with two councillors attending in person and four joining via Teams. It was a great opportunity to discuss exciting plans for the year ahead and explore new ways to engage with our local NDT community.

While we've had a smaller group attending meetings over the past couple of years, there's never been a better time to get involved. The council plays a vital role in shaping events, initiatives, and opportunities for our members – and we'd love to see more fresh faces and new ideas around the table.

Whether you're passionate about supporting your industry, keen to network with like-minded professionals, or looking to develop your leadership skills, joining the council is a rewarding way to make a difference.

NDT Tri-Series Cup: Get Ready for Fun, Competition, and Networking

The South Australia Branch is gearing up for an exciting new initiative – the NDT Tri-Series Cup, a fun and friendly competition designed to bring together NDT professionals from across the region. This series will see participating NDT companies go head-to-head in a range of exciting social events – with plenty of opportunities for networking and bragging rights on the line!

The NDT Tri-Series Cup will feature a variety of activities, giving everyone a chance to get involved and showcase their skills – on and off the job site! Planned events include:

- **Lawn Bowls** A classic social favourite where precision meets relaxation.
- **Axe Throwing** Release some energy and see who can hit the bullseye!
- **Golf Simulator** Test your swing and compete for the longest drive or closest to the pin.

Queensland Branch Update

Kicking Off 2025 with Growth and Innovation at AINDT QLD

As we welcome another year, the AINDT Queensland Branch is excited to continue its commitment to professional development, industry collaboration, and technical excellence. 2024 was a dynamic year filled with insightful tech nights, networking events, and industry recognition, and we are eager to build on that momentum in 2025!

New Year Celebration in Gladstone

We started the year with a fantastic New Year Dinner at Auckland House, Gladstone on 16 January 2025. This event provided a wonderful opportunity for members to connect, reflect on the past year, and set the stage for another exciting chapter in NDT. We extend a special thank you to our Sponsors, whose support made this celebration possible.

A big thank you to our Gold, Silver, and Bronze sponsors for their generous support, which has made these.

Gold Sponsors

SGS EVIDENT

Silver Sponsors

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Bronze Sponsors

AUSTRALASIAN INSPECTION SERVICES PROTECS GLOBAL

Exciting Tech Nights Planned for 2025

Building on the success of our 2024 tech nights, we are thrilled to announce a new lineup of technical sessions covering multiple NDT modalities this year. These sessions will focus on cutting-edge advancements, hands-on demonstrations, and industry best practices, ensuring that our members stay at the forefront of innovation.

Stay tuned for more details! We encourage all members to participate, engage, and take advantage of these valuable learning opportunities.

Looking Ahead: Stay Engaged with AINDT QLD

As we embark on another year, we remain dedicated to fostering a strong and connected NDT community. We encourage our members to take part in upcoming events, technical sessions, and networking opportunities that will shape the future of NDT in Queensland.

Your participation and engagement are key to the branch's success—let's make 2025 another year of learning, collaboration, and growth!

Victoria & Tasmania Branch Update

Victorian Branch Christmas BBQ

Wrapping up 2024 with the AINDT Victorian Branch Christmas BBQ at Emerald Lake Park was fantastic. Great food and conversations made for a perfect day with colleagues, friends and family. The Boatshed Shelter was centrally located near the BBQs, paddle boats and Puffing Billy railway line.

With drinks and snacks available, we took the opportunity to relax, catch up and explore the park. By lunchtime, the BBQ was in full swing and the kids received their Christmas gifts with most ending up in the lake – always a highlight for the parents…!

A huge thank you to Glen Haberl for your effort in making the day run so smoothly. It's easy to underestimate the work that goes into organising such an event. It was a perfect way to reflect on the year and look ahead to an exciting 2025.

First Meeting for 2025

The Victorian Branch's first meeting of 2025 took place on 28 January, covering key ongoing discussions and planning for the year ahead.

Key takeaways from the meeting:

- **Membership Renewals:** Automatic termination occurs after 60 days of non-payment, but there was discussion on whether this rule is too strict. The Branch will seek further clarification.
- **Membership Incentives:** Efforts are underway to finalise an incentive program to encourage engagement.
- **Technical Events and Industry Engagement:** A calendar of technical events is being drafted, covering topics such as Thermography, Guided Wave Testing, and Heat Treatment. There was also discussion on collaborating with industry partners such as EVIDENT, ENDETEK and Waygate.
- **Social and Networking Events:** Plans include a Tasmania Industry Catch-Up and the 2025 AGM, with details to be confirmed.
- **Empowering Women in NDT and Mental Health Support:** The branch is exploring ways to better support members in these areas, with proposals to be developed.

Following a branch vote, Brett Hyland was selected as the Victorian Branch representative for the AINDT Constitutional Committee. His experience and past involvement with AINDT made him a strong candidate for the role. We thank all nominees for their interest and encourage ongoing engagement with the Branch.

Looking ahead to 2025 with a mix of technical events, networking opportunities, and industry collaborations on the horizon, 2025 is shaping up to be an exciting year for the Victorian Branch. We encourage members to stay involved, provide feedback, and participate in upcoming events.

If you have any ideas or would like to contribute, don't hesitate to reach out we are actively seeking new councillors to join.

SONOMATIC

TECHNICAL EVENT

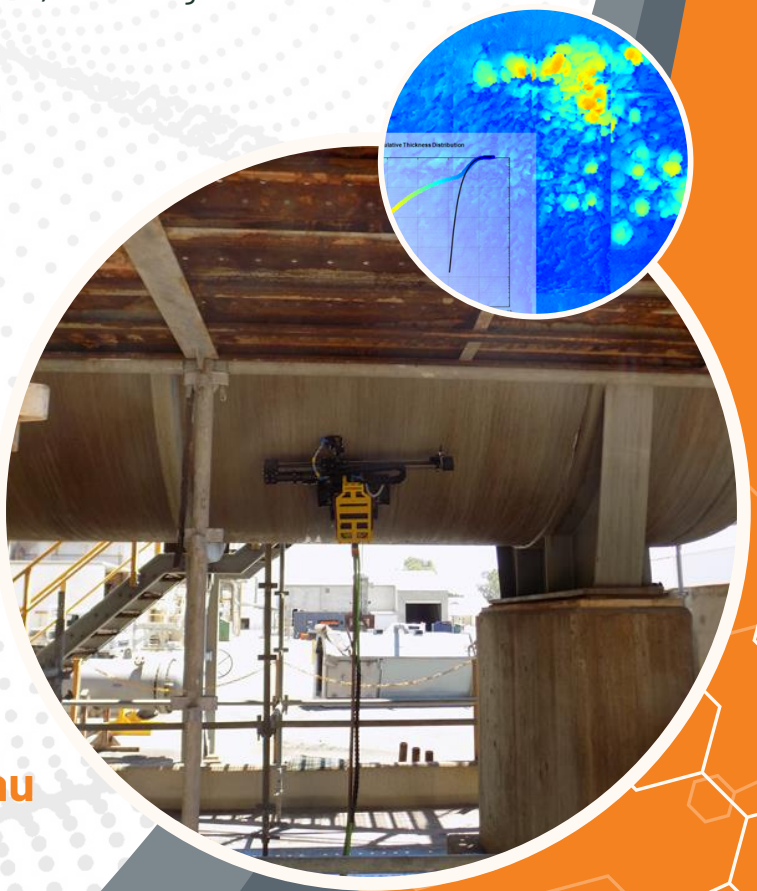
REDUCING THE RISKS OF CONFINED SPACE ENTRY WITH NON-INTRUSIVE INSPECTION

Sonomatic is a global leader in Non-Destructive Testing (NDT) inspections, combining in-house developed robotics, software, and bespoke equipment with data science and integrity engineering. Specialising in ROV-deployed subsea inspection and Non-Intrusive Inspection (NII) technologies.

25, MARCH 2025

5:30 -7:30 PM

19 WALTERS DRIVE, OSBORNE PARK



Food and Bevereges will be provided

Please RSVP and include any dietary requirements to:

marketing@vertechgroup.com.au

AINDT
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Western Australia Branch Update

Upcoming Technical Events

The AINDT Western Australia Branch has some fantastic events coming up, offering members the chance to connect, learn, and have some fun with fellow NDT professionals. Whether you're looking to expand your network, gain industry insights, or simply enjoy some downtime with your peers, there's something for everyone.

We're always on the lookout for volunteers to assist with events or share their expertise. If you'd like to get involved, we'd love to hear from you!

Don't miss this chance to be part of the action – let's make 2025 a year to remember for AINDT WA!

Generation DR X-Ray Panels

Thursday 13 March 2025 | Welshpool | 6.00pm

The Western Australia Branch invites all members to attend a technical night on Thursday 13 March 2025 at Apave Metlabs. The night will be hosted by Durr NDT, APAVE and ENDETEK .

Don't miss your last chance to see the latest Generation DR X-Ray panels, including the new Bendable 1024from Duerr NDT with the latest D-Tech X Evaluation software.

To attend this event please RSVP to:
sales@endetek.com.au and mark.welland@irisndt.com

Reducing the Risks of Confined Space Entry with Non-Intrusive Inspection

Tuesday 25 March 2025 | Osborne Park | 5.30pm to 7.30pm

Reducing the risks of confined space entry with non-intrusive inspection is crucial for protecting worker safety, minimising exposure to hazardous environments, and preventing accidents. It enhances operational efficiency by reducing downtime and lowering the costs associated with traditional entry-based inspections. Learn more during this event, which is sponsored by Sonomatic.

Sonomatic is a global leader in Non-Destructive Testing (NDT) inspections, combining in-house developed robotics, software, and bespoke equipment with data science and integrity engineering. Specialising in ROV-deployed subsea inspection and Non-Intrusive Inspection (NII) technologies.

To attend this event, please RSVP to:
marketing@vertechgroup.com.au

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ARE YOU OUR NEW

CERTIFICATION ASSISTANT?

As AINDT's Certification Assistant, you will be the first point of contact for certification applicants, members, and clients. Your role will involve processing certification applications, managing databases, coordinating exams, and providing excellent customer service. This is a fantastic opportunity for an organised and proactive professional looking for a flexible role in a dynamic industry.

What We're Looking For

- Proficiency in MS Office (Word, Excel, Outlook).
- Excellent written and verbal communication skills.
- Strong attention to detail and ability to manage multiple tasks.
- Previous administration experience, preferably in a certification, education, or membership-based environment.
- Experience with database management is desirable.
- A proactive, team-oriented individual who can also work autonomously.

Why Join Us?

- Flexible work arrangements – part-time or casual hours to suit your lifestyle.
- Develop your career in a supportive and professional environment.
- Collaborative team culture where your contributions are valued.

Apply Now

If you'd like to receive a copy of the Position Description, or have any questions about the role, please email Stuart Norman (CEO, AINDT) on stuart.norman@aindt.com.au

AINDT's 2025 Footy Tipping Competitions Are Here! Get In The Game

The 2025 footy season is just around the corner, and it's time to put your tipping skills to the test! Whether you're an AFL fanatic or an NFL expert (or both!), AINDT's Footy Tipping Competitions are your chance to get in on the action, enjoy some friendly rivalry, and compete for cash prizes!

With two competitions running – one for AFL and one for NFL – you can choose your code or double your chances by entering both! Plus, it's completely FREE to enter!

Prizes up for grabs (for each competition)

- **1st Place** $300
- **2nd Place** $200
- **3rd Place** $100

Why Join?

It's easy and fun to play!

Compete against your peers for bragging rights.

Score fantastic cash prizes.

Be part of the AINDT community spirit.

So, who will come out on top – the AFL experts or the NFL pros? There's only one way to find out!

Don't miss out – register today and let the tipping begin! Good luck, and may the best tipper win!

Register for the NFL competition:
www.footytips.com.au/comps/AINDT_NRL_2025

Register for the AFL competition:
www.footytips.com.au/comps/AINDT_AFL_2025

Farewell from Russell and Eileen Fraser

It is with joy and some sadness that I wish to announce that Russell Fraser Sales has been sold to John Nandlal and Maree Bunney of Cebeco Pty Ltd.

After over 30 years, the business has served us well and we have had great support from suppliers and customers, but the time has come. Now in our mid-seventies, Eileen and I are ready to retire.

The new owners are keeping all staff and the operation of the business will continue and grow to do bigger and better things into the future. The business will continue as Russell Fraser Sales (just not Pty Ltd).

I will still be around for the transition period to make s ure all goes well and smoothly.

The staff are well trained and will be able to assist with the needs of customers and the dealings with suppliers.

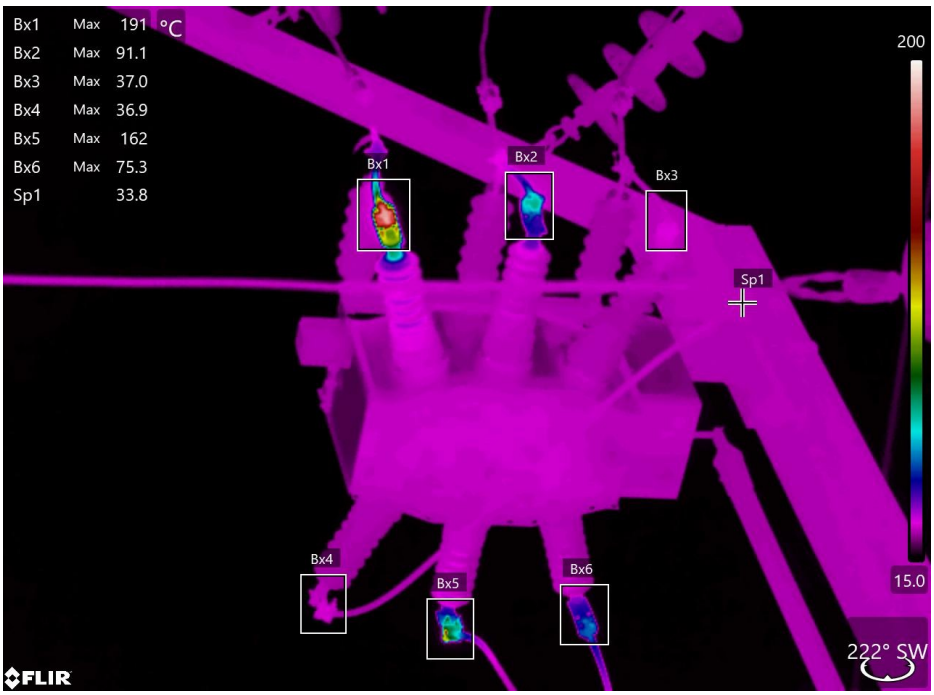
Thank you for all your support and friendship over the years and we wish you well into the future.

Regards,
Russell and Eileen Fraser

Thermography of Lightly Loaded Equipment: Do the Temperature Equations work?

An in-field investigation of a 22KV Gas Break Switch with very low load, showing a medium priority DeltaT, and the thermal image of the same switch with high load.

22KV Gas Break Switch under load of (Assumed) 25Amp
Camera: FLIR T660/12deg NFOV Lens.
Emissivity set to 1.00
Low range: -40-150°C
Date: 13/1/2025 Time: 10.48AM



22KV Gas Break Switch under load of (Assumed) 25Amp + 150Amp
Camera: FLIR T660/12deg NFOV Lens.
Emissivity set to 1.00
Middle range: 100-650°C
Date: 16/1/2025 Time: 11.50AM

BY ERIK THORUP, DIRECTOR IR TECHNOLOGY AUSTRALIA PTY LTD
CATEGORY 3 THERMOGRAPHER, ELECTRICAL/MECHANICAL (AINDT/BINDT)

The two images above are shown in Temperature Linear mode, taken on site on the 13 and 16 January 2025, using the same FLIR T660 camera with NFOV 12° lens and 640x480 resolution. The Emissivity was set at 1.00 and it was attempted to focus the images as well as possible.

As can be seen, the composition of the Gas Switch is not the same in the two pictures. The Gas Break switch is usually only powering a smaller suburb on this site, and there is no monitoring of the accurate load on this particular switch or the smaller suburb. However, looking at the individual sub stations that are fed by the Switch, it was assumed that the normal load is between 20A and 30A.

However, the Switch will be susceptible to an additional 150A load if the usually loaded Main Town Circuit (Line 2) for some reason is turned off, and the backup Circuit (Line 1) that is fed by this switch, is turned on.

The site is in the North Australian Tropics, with fairly high ambient temperatures (35°C) and, at this time of the year, also high humidity (80+%).

Being usually based in the Southern part of Australia (Temperate Maritime), a clear sky will normally show a temperature of under minus 60°C. This may have a real influence on reflected temperatures and the measurement results and accuracy when looking at smaller objects towards the sky. Being in the tropics with high humidity in the sky, we can see that Sp2 in the first image is as high as 6.8°C even when looking into the clear blue sky. We do therefore not expect a large error due to the "sky temperature".

The first observation is that in the low load (first) image, only the Bx1 area at 64°C, with a DeltaT of 24°C, shows a fault which needs to be addressed. All other connections are seen to be between 38.3°C and 40.5°C.

If you are very careful, the slight visual anomaly at Bx2 at 40.5°C may have given you a bit of an indication that something else is happening, but all the other 4 connections do not exactly show any anomalies.

However, looking at the second image, we see four connections with anomalies, and some which had none, are now at a higher degree of urgency.

Assuming the measurements in the images are relatively correct, we will see if the temperature equation for any increase in load would be able to give us a bit of information.

We know Ohms law: $V = I * R$

and we know Watts law: $P = V * I$
which results in $P = I2 * R$

Assuming that the reason we have the deltaT in these electrical connections, is purely due to an electrical resistance, and that the resistance stays constant even at higher loads and temperatures, then this law states that the power lost in the resistive connection will all be turned into heat and therefore an increase in temperature.

Assuming that the lower load of 25A is causing the DeltaT in the first Thermogram, we can therefore calculate the expected DeltaT Temperatures at the load of 175A as following: Initial DeltaT @ 25A times 1752 / 252 which gives us

Initial DeltaT @ 25A times 49 (Temperature rise at 175A will be 49 times higher than at 25A).

Ambient: 35.4°C	Measured T	DeltaT @25A	Calculated @175A	Actual measured
Bx1	63.8°C	28.4K	1455°C	191°C
Bx2	40.5°C	5.1K	290°C	91°C
Bx3	38.3°C	2.9K	180°C	37°C
Bx4	39.8°C	4.4K	255°C	37°C
Bx5	39.9°C	4.5K	260°C	162°C
Bx6	35.4°C	3.0K	185°C	75°C

Conclusion

It is apparent that—had these calculations been performed prior to the high load change—then the result of 1,455°C might have caused us to abort the load switch.

In reality, the load change WAS performed, and the resulting DeltaT temperatures were not nearly as drastic as we had calculated. Part of the reason for this may be assuming a too low Ambient in the calculations. Also, a high load change as we see here, MAY cause some arcing and/or change in the resistance of the connections, 'blowing dirt and corrosion' away, and possibly causing a better electrical connection with less resistance.

However, it is apparent that we simply cannot rely on finding 'all the faults' if we do not have sufficient load. We also cannot assume the equations will work in this case of a very low load, when we try to calculate the DeltaT at higher loads. In short: you cannot trust the results of a survey performed under low loads.

Standards Update

The year has started with the Standard AS 3669 Non-destructive testing—Qualification and approval of personnel—Aerospace issued for Public Comment.

It is taking on identical adoption of EN 4179 (also by the name of Non-destructive testing – *Qualification and approval of personnel – Aerospace*) (EN 4179:2021, IDT). Closing date for comments is 13 March 2025.

The revision of AS 3978 *Non-destructive testing—Visual inspection of metal products and components* has been completed. The draft has been sent to Standards Australia editors who are currently reviewing it, with the standard expected to be accepted for Public Comment very soon.

The 2020 version of ISO 4993 *Steel and iron castings — Radiographic testing* was still being compared against the new 2024 version to determine if the revision was acceptable to current practices and industry. The completion target date for the review was 19 February 2025.

Recently we lost of the services of our Standards Australia Project Manager Hana Numazawa, who had been instrumental in completing work with the Standards Australia Committee MT007 *Non-Destructive Testing of Metals and Materials*. Hana will be greatly missed. We are pleased to welcome Richard Reyes as our new Project Manager. His expertise will be invaluable as we navigate this important period of deeper integration within ISO, focusing on the revision and development of Standards. We look forward to working together to drive these critical initiatives forward.

It may appear that voting and proposals can be rather confusing from the below tables. However, a lot of the voting and proposed projects are ongoing with changes or revisions being made continuously until consensus is achieved. Therefore in some cases it may appear that the same Standards Project is subject to a vote where, in fact, it may have been voted down and requiring further revision before another vote being called.

New Convenor

Reference & Title

Appointment of convenor for Thermographic Testing ISO/TC 135/SC 8/WG 5 – Dr.Mathias Ziegler

Current Closed Ballots

Reference & Title

ISO/DIS 16811: Non-destructive testing — Ultrasonic testing — Sensitivity and range setting

ISO/DIS 16826 (Ed 2): Non-destructive testing — Ultrasonic testing — Testing for discontinuities perpendicular to the surface

ISO 20807: Non-destructive testing — Qualification of personnel for limited application of non-destructive testing

ISO/FDIS 2400 (Ed 3): Non-destructive testing — Ultrasonic testing — Specification for standard block No. 1

Current Open Ballots For Voting

Reference & Title

ISO/DIS 16823: Non-destructive testing — Ultrasonic testing — Through-transmission technique

Proposed Projects (includes revisions)

Reference & Title

ISO/DIS 16809: Non-destructive testing — Ultrasonic thickness determination

ISO/NP 25335: Non-destructive testing –Thermographic testing –Mechanical and electrical equipment testing

ISO/DIS 16827: Non-destructive testing — Ultrasonic testing — Characterization and sizing of discontinuities

With regards to thermography, there does appear to be some confusion relating to the NDT Electrical Thermography. There is potential duplication with thermography for machine systems in ISO18434-1 *Condition monitoring and diagnostics of machines* — Thermography. It was found that potentially two different Standards cover the same arena. The topic has been raised with ISO/TC 135 /SC8 and we will await the outcome from the next meeting.

Please contact me using the details below if you have any questions or require further information and I will reply at the first opportunity.

Angelo Zaccari
MT007 Standards Chairperson
angelo.zaccari@outlook.com

AICIP Update

Change of AICIP Management

AINDT would like to inform all member that there has recently been a change in the AICIP management.

Weld Australia has taken over both the In-Service Inspector (ISI) and Senior In-Service Inspector (SISI) certifications and examinations previously performed by the Australian Institute for the Certification of Inspection Personnel (AICIP).

Weld Australia will contact all the certified individuals with instructions on how to access and manage their certifications through the WeldQ platform.

Moving forward, the primary point of contact for any AICIP-related matters is Weld Australia. Please direct all future inquiries to the following email address: qnc@weldaustralia.com.au.

About AICIP Certification

Recognised nationally, AICIP certification can expand your career options and job opportunities. Examinations assess the level of skill, knowledge and capability of professionals working in the pressure equipment sector to ensure the integrity and safety of plant and pressure equipment inspection.

Suggested Prior Attributes Of Candidates

There are no prerequisites, prior qualifications, training or experience required for ACIP in-service inspectors' examinations. However, candidates with insufficient industry experience will have difficulty passing the theoretical Paper B and practical Paper E.

To have a reasonable likelihood of demonstrating the required competency and passing the exams, it is strongly recommended that applicants have at least the following:

- Qualifications:
  - Year 12 High School, a trade certificate or equivalent knowledge.
  - Knowledge of common pressure equipment types and terminology used in Australian Standards.
  - Basic mathematics ability (for example, to calculate the volume, thickness and hoopsters of a cylinder).
- Training: 100 hours of either self or on-job training in pressure equipment inspection and the application of AS/NZ 3788.
- Experience: five years (full time equivalent) including two years in inspection. Experience should be sufficient to develop basic technical skills and good communication skills.
- Pressure equipment knowledge: an understanding of the main technical inspection terms relating to pressure equipment.
- Personal skills:
  - Ability to read, write and communicate orally in English.
  - Maturity and reliability.
  - Good eyesight and hearing (with or without correction).

For SISI applicants, more in-depth experience, calculation and technical ability is desirable.

In-House X-ray Capability Upgrades Benefit Process Control and Quality Control at Alliance Connect

Alliance Connect is an Australian foundry, that was founded in 2005 through the amalgamation of a number of well-respected casting businesses.

The owners boast a history in the industry stretching back over 50 years and have continued to grow and prosper as a local manufacturer, while others around them have shut down or shifted their operations offshore.

While in-house expertise and range of services has been a foundation of their business, their commitment to quality has been key to their growth and their partnership with AXT has been of great benefit here.

Castings produced by Alliance Connect. Image credit: Alliance Connect.

Castings produced by Alliance Connect. Image credit: Alliance Connect.

Alliance Connect were primarily involved with aluminium and copper alloys and serviced a diverse range of industries. In more recent times, they have continued to expand working with more specialty alloys including Ni resist and providing castings to the biomedical, petrochemicals and defence industries.

Traditionally, they had relied on outsourcing radiographic work to help refine the casting process, visual inspections and mechanical tests to verify the quality of their castings. However, the radiographic work was expensive and would typically take weeks to turn around resulting in extended lead times. Furthermore, some of the mechanical testing was destructive and would require more parts to be made.

In 2021, with the aim of further improving their quality and streamlining their operation, Alliance Connect purchased a cabinet X-ray machine from Nissan Casting. They in turn had recently upgraded their system to an Yxlon MU-2000D sourced via AXT. The cabinet-based system served them well for a number of months but started showing signs of age. Having identified the value of the capability to the business, Alliance Connect looked for a company with the expertise to upgrade their system and turned to AXT.

Following a detailed consultive process to understand their needs and expectations, AXT recommended upgrading numerous components such as the X-ray source, high-voltage generator and control unit. With a clear understanding of what was involved, AXT was commissioned to perform the upgrades with modules from Comet X-ray.

The upgrades provided a revelation. At the front end, the usability has been improved with a new user-friendly graphical interface, while several processes have also been automated, reducing the burden on operators. It also provides a better understanding of how the system operates. In conjunction with hardware upgrades, this has culminated in a 50% faster work rate, resulting in higher throughput rates, with the system typically being used for 4hrs per day.

The system has also been integrated into their workflow where it is used for process optimisation. Technical Manager, Richard Seymour-Wright explained, “As a jobbing shop, we are always needing to cast different components. Having in-house X-ray inspection allows us to rapidly check castings and refine our process.

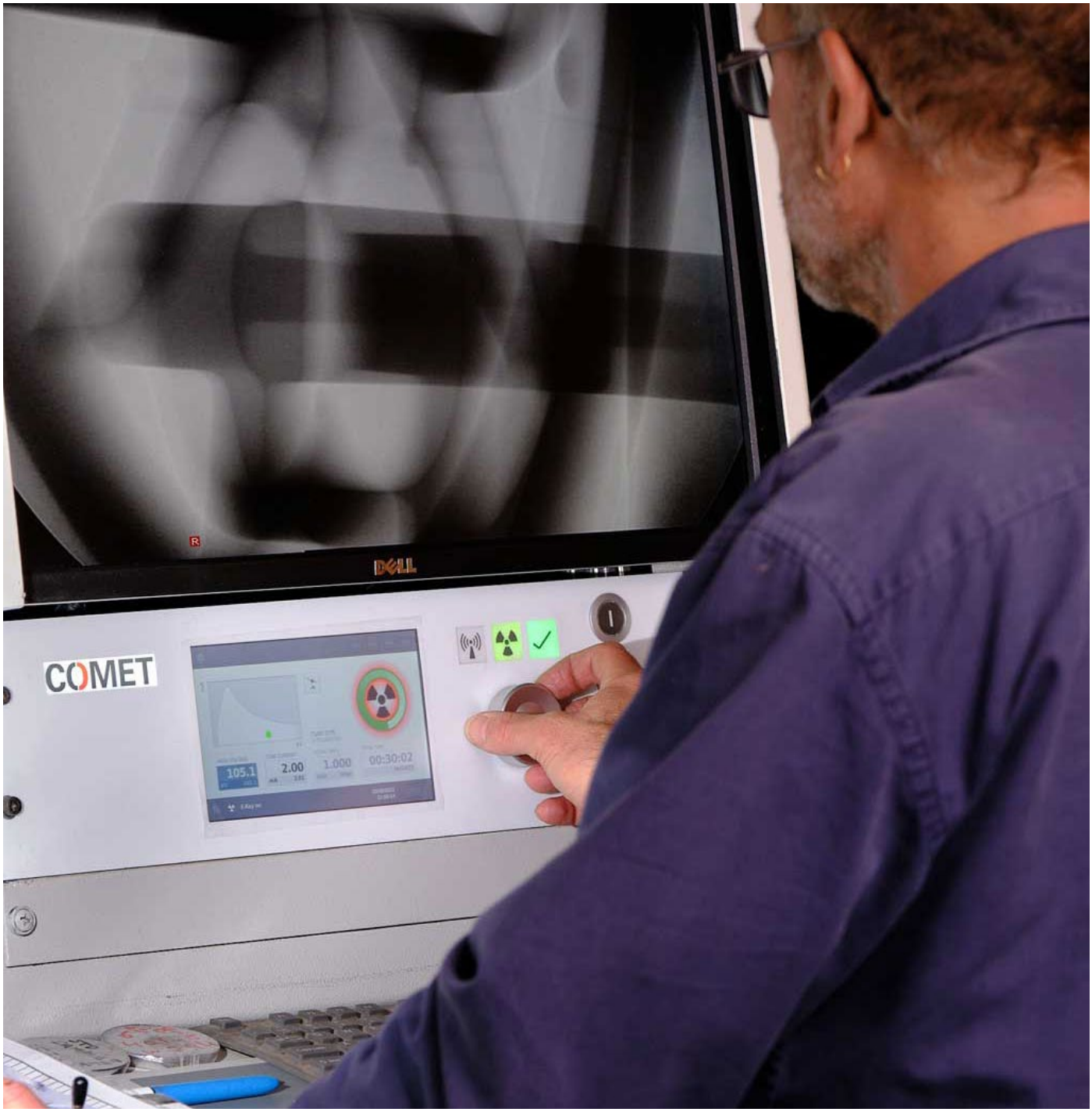


Image credit: Matt Wright Photography.

Previously it could take weeks to get results, now we can cast a part, inspect it and decide what processing variable to change in as little as 10 minutes, providing almost real-time process control."

"X-ray inspection also allows us to non-destructively inspect finished parts as a final quality check. In the past, sometimes our visual inspections didn't reveal subsurface defects. Our in-house X-ray inspection has reduced our defect rate at the customer end to less than 1%, improving our overall customer experience, in conjunction with reduced lead times. And this is where we need to be with our defence contracts," said Seymour-Wright.

Speaking about his experience dealing with AXT, Seymour-Wright commented, "We have been very happy with the sales and after sales service from AXT. They offered us great advice on the proposed options to upgrade our machine, and the install was well planned and went very smoothly."

With an increased need for local manufacturing, the upgrades to their X-ray inspection capabilities for both process optimisation and quality control, along with other planned expansions, put Alliance Connect in a great position to service local industries and provide quality products, potentially offering a superior option to source parts from overseas.

AINDT
Australian Institute for Non-destructive Testing

RENEW YOUR MEMBERSHIP

RENEW FOR REWARDS: STAY A STEP AHEAD WITH 2024-2025 AINDT MEMBERSHIP

AINDT MEMBERSHIPS ARE NOW DUE

Whether you're looking to enhance your knowledge, expand your network, or influence industry standards, AINDT is your gateway to success. Connect with top professionals and thought leaders in an environment that celebrates innovation and progress. Just some of the member benefits are outlined below.

- Regular editions of the AINDT Journal (6 per year)
- Substantial discounts on certification fees and expenses
- Access to our online portal and resources
- Eligibility for exam and industry service awards
- A host of networking opportunities, including branch events, workshops, seminars, and our conference
- Exclusive Corporate Member benefits like free and discounted advertising rates, and technical advice

RENEW NOW >>>

aindt.com.au

Design of an Eddy Current Testing System for Non-Magnetic Hollow Tube Inspection

This paper presents an experimental setup for Eddy Current Non-Destructive Testing of non-magnetic hollow tubes.

BY YASMINE BELKAHLA, GHALEM HADRI KHOUSSA, ABDELHALIM TAIEB BRAHIMI AND NABIL BOUGHANEMI

The system features movable coils and electronics for signal processing. The study explores the impact of defects on signal amplitude and

investigates the influence of different frequencies (1-100 kHz) on detection capability.

Results demonstrate the system's effectiveness in detecting defects while highlighting challenges in noise reduction and the importance of frequency selection for accurate detection.

Introduction

Eddy Current Non-Destructive Testing (NDT) plays a crucial role in modern industry, offering an inspection method to assess the integrity of conductive materials [1]. This technique is highly important in aerospace, automotive, and energy sectors, where component reliability and safety are paramount [2]. The design and implementation of an experimental setup for Eddy Current NDT dedicated to hollow tubes represent a considerable technical challenge, requiring a multidisciplinary approach [3]. This implementation must involve a series of interconnected steps, each presenting its own technical challenges.

At the heart of the system lies the design of the sensor, comprising an excitation coil to generate the magnetic field and a reception coil to detect its variations. This step must be followed by the development of a signal generation and conditioning system, where a generator produces an alternating current at a carefully chosen frequency for excitation, while a conditioning circuit processes the received signal [4].

Simultaneously, a data acquisition system must be set up to capture and digitize the signals [5]. This article falls within this framework and aims to present the implementation of an experimental setup dedicated to Eddy Current NDT.

In the remainder of this paper, we will first provide a detailed presentation of our system, explaining its various components and design. We will then move on to an explanation of our operational methodology, focusing on our inspection procedure and data acquisition process. A conclusion will be presented at the end of this paper.

2. System Description

The designed system, dedicated to Eddy Current NDT of hollow tubes, consists of a vertical structure representing an elevator used in practical work on combinatorial and sequential logic. An aluminium tube is fixed to the base of this structure, and a rod attached to the elevator cabin carries the coils that serve as sensors at its end [1].

By moving the elevator cabin, the coils move vertically and penetrate inside the aluminium tube. This operation allows scanning the interior of the tube along its entire length.

The designed system, dedicated to Eddy Current NDT of hollow tubes, consists of a vertical structure representing an elevator used in practical work on combinatorial and sequential logic. An aluminium tube is fixed to the base of this structure, and a rod attached to the elevator cabin carries the coils that serve as sensors at its end. By moving the elevator cabin, the coils move vertically and penetrate inside the aluminium tube. This operation allows scanning the interior of the tube along its entire length.

The electronic part of the system includes a signal generator that produces a high-frequency alternating current. This current is sent to the transmitting coil, creating a variable magnetic field around the aluminium tube. The receiving coil detects variations in the magnetic field caused by these currents. The signals captured by the receiving coil are amplified and filtered.

An oscilloscope visualizes these signals in real-time. The data is then stored in the computer and analysed to detect anomalies in the tube. An Arduino board is used to control the DC motor used to move the elevator cabin [6].

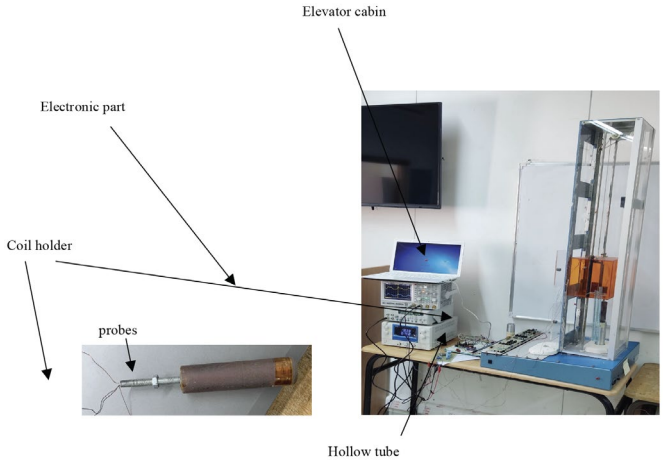


Figure 2.1. Experimental system

3. Operational Methodology and Results

Our experimental protocol involves applying a sinusoidal signal (with amplitude Vmax and frequency f) and moving the coils inside a tube in 1-millimeter increments. At each position, we measure the voltage across the receiver coil. This voltage, also sinusoidal and of the same frequency as the input signal, varies in amplitude depending on the presence or absence of a defect. We will use these amplitude variations to detect potential flaws. To validate our method, we will use two non-magnetic tubes specially prepared for the experiment. The first tube features two grooves (figure 3.1.b), while the second has only one (figure 3.1.a). These grooves simulate defects and are characterized by their width and depth.

At each position of the coil inside the tube, we observe and record the voltage across the coil using a digital oscilloscope. We have noted that the amplitude of this voltage decreases in the presence of a defect, which serves as our primary detection.

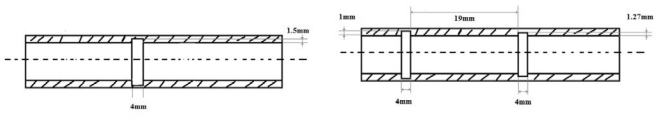
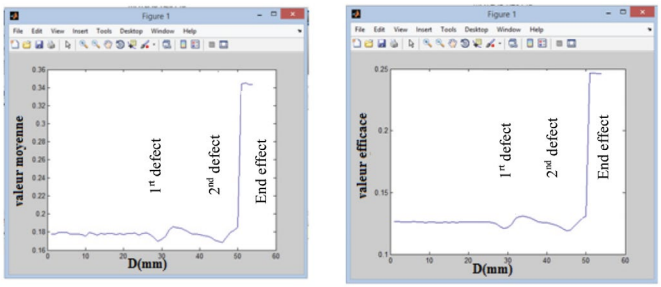


Figure 3.1. Tube hollow defects

criterion. However, the measured voltage is subject to various disturbances. This noise originates from multiple sources, including the test plate, mains voltage, and vibrations that influence the magnetic field generated by eddy currents.



(a) (b)

Figure 3.2. coil voltage in the two-defect tube

To enhance the signal quality, we implemented a low-pass filter. This filter eliminates high frequencies, primarily caused by vibrations, thus reducing noise and improving the accuracy of defect detection.

We repeated this procedure for each position of the coil along the tube containing two defects. Subsequently, we graphically represented the maximum value and the root mean square (RMS) value of the obtained signal as a function of the coil's displacement.

Figure 3.2.a illustrates the evolution of the mean voltage across the coil according to its position in the tube. We observe that this curve shows fluctuations at the beginning and in the absence of defects, mainly attributable to noise from the 50 Hz power grid. Under ideal conditions, this voltage should remain constant in the absence of defects. In contrast, Figure 3.2.b shows the evolution of the RMS value and demonstrates a significant attenuation of these fluctuations. A final fluctuation is observed, representing the edge effect. This is caused by an abrupt change in impedance as the coil approaches the end of the tube.

These observations allow us to better understand the signal behavior in the presence and absence of defects, as well as the effects of external disturbances on our measurements.

As part of our study, we also investigated the impact of frequency on defect detection capability. To this end, we conducted a series of tests using three distinct frequencies: 1 kHz, 10 kHz, and 100 kHz. The results of this comparative analysis are presented in detail in Figure 3.3. This graphical representation shows the evolution of the voltage across the coil as a function of its position within the tube, and clearly illustrates the performance differences obtained for each of the tested frequencies.

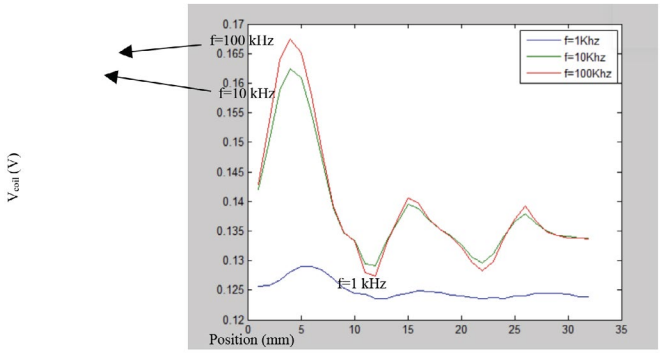


Figure 3.3. coil voltage in the two-defect tube for 3 frequencies

4. Conclusion

In conclusion, this study has developed an experimental setup for Eddy Current NDT of non-magnetic hollow tubes. The system's design, incorporating movable coils and signal processing, proves effective in detecting defects in aluminum tubes.

Our results highlight the importance of noise reduction techniques, such as low-pass filtering, in improving signal quality and defect detection accuracy. The comparative analysis of different frequencies (1 kHz, 10 kHz, and 100 kHz) demonstrates that higher frequencies generally offer better defect detection capabilities, likely due to the skin effect and increased sensitivity to surface anomalies.

Future work could focus on further optimizing the system for specific industrial applications, exploring advanced signal processing techniques, and investigating the detection limits for various types and sizes of defects.

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Innovative Phased Array Adaptive Scanning Technique for Complex Aerospace Structures

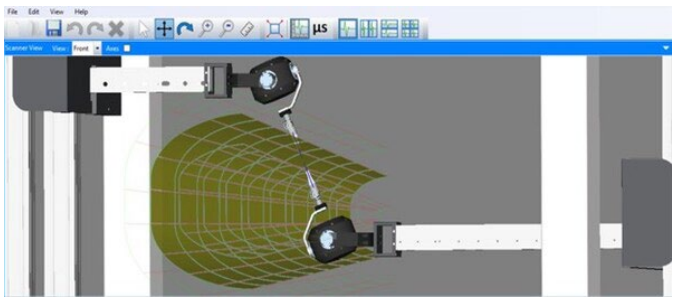
In the ever-evolving aerospace industry, ensuring the structural integrity of components is paramount. Traditional non-destructive testing (NDT) methods, while effective, often fall short in addressing the complex geometries and material properties of modern aerospace structures.

Automated Ultrasonic Testing (AUT) provides consistent, reliable, and repeatable scanning results. In the following sections we present the benefits of combining Advanced 3D Scanning and Adaptive Phased Arrays Technique. This innovative technique leverages advanced phased array technology and adaptive algorithms to provide precise, fast imaging and analysis, enhancing the detection of flaws and ensuring the highest standards of safety and reliability in aerospace applications, while reducing the prevalence of human error.

Automated Ultrasonic 3D Scanning

Automated ultrasonic testing (UT) using 3D scanning capabilities enhances the inspection process by teaching the part geometry in the NDT software (such as the TecView® 3D), either by using a CAD drawing or manually by extruding a contour, enabling precise, automated C-scan mapping. The software then generates accurate trajectories for 3D probe positioning along the calculated scanning paths, maintaining probe/array alignment with the calculated grid.

This 3D Scanning technique provides the means for inspecting large and complex structures while ensuring accurate defect detection and inspection efficiency.

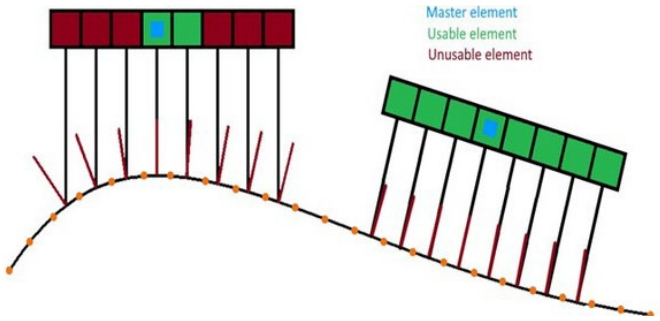


3D calculated trajectories for scanning of complex aerospace composite structure.

When scanning structures with flat surfaces using phased arrays, focal laws are used to electronically index multiple lines simultaneously, resulting in efficient scanning inspections. However, for structures with curved surfaces and complex geometries, 3D phased array scanning is hard to accomplish since not all the array beams (focal laws) arrive perpendicular to the inspected surface during the scan. Thus, the focal laws of the phased array probe need to dynamically adjust during scanning to adapt to the curvatures and achieve accurate and repeatable scans.

Phased Array Adaptive Scanning

Phased Array Adaptive Scanning method was developed to overcome the geometrical challenges of the scanned structures. It uses a master array element to ensure that the ultrasonic beam respects predefined angular tolerances. This method adapts to curved surfaces, using only elements near the master element within acceptable angle tolerances, which is established from a reference parts.

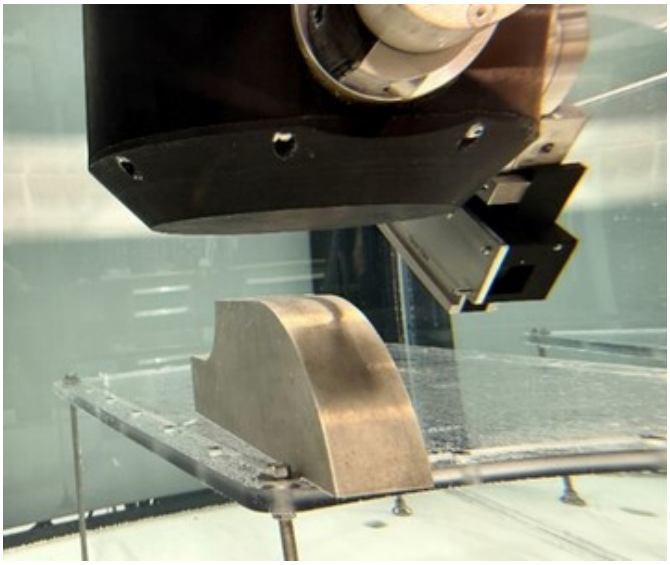


Focal law aiming at 0° on the part surface.

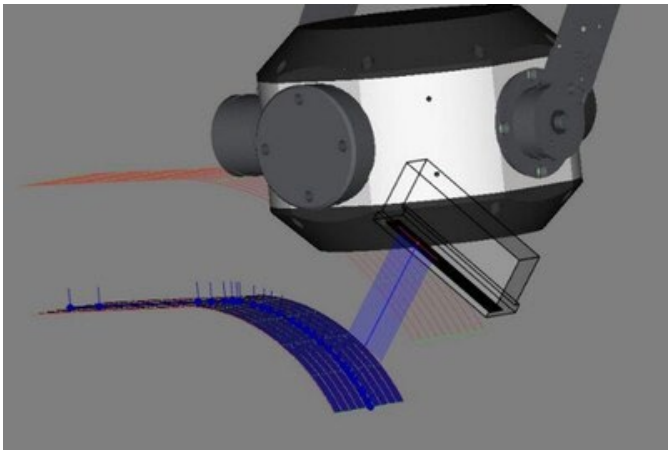
This adaptive scanning method ensures that the generated focal laws do not fire at the inspected surface at angles greater than the given tolerances. When the array reaches surfaces with minimal curvature, all the elements can be used simultaneously to perform the required scan.

Some Results to Share

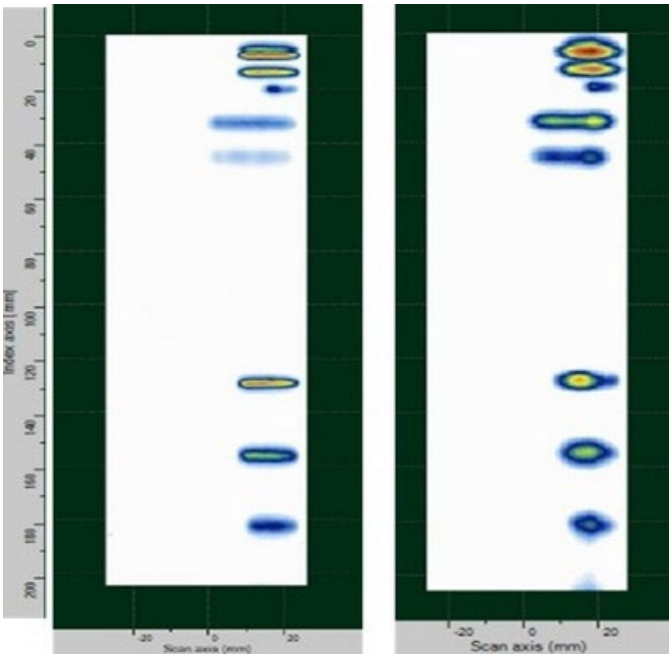
To demonstrate the effectiveness of the developed Phased Array Adaptive Scanning technique, experimental automated 3D UT (single element) and 3D Phased Array tests were conducted on a curved aluminium test part. A focused single element probe was selected to obtain



Automated 10-axis ultrasonic PA immersion system.



Surface extraction and creation of orthogonal axes trajectories from contour following curve.



C-Scans: left - mono element, right - PA.

comparable defect detectability with the phased array probe. These tests demonstrate a significantly improved inspection time of the 3D Phased Array approach.

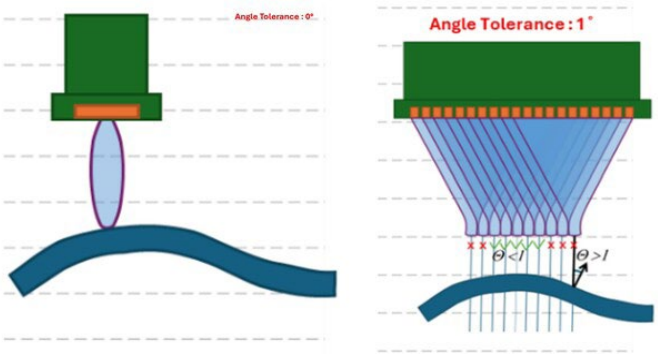
A comparison of the scanning times (3D single element scans and 3D Phased Array scans) for the curved aluminium test part, comparing the flat and curved sides to demonstrate the advantages of Phased Array in terms of scanning times.

For 3D scans using the single UT element, the scan time was 16m 42s, the scan of flat side of the inspected sample took 8m 23s of the total scanning time and the curved side took 7m 72s.

However, the 3D Phased Array scans of the whole part took 6m 30s, the flat side took 15s and the curved side 6m 15s. All scans were done at a resolution matching the pitch of the Phased Array probe (0.6 mm) and by optimising the PRF and scanning speed. This simple test result illustrates the benefits of 3D Phased Array Scanning; flat areas benefit from the full advantages of electronic focusing, while the scanning time of curved sections depend on the acceptable angle tolerance. These results, when scaled to production loads, are very important especially in industries with shapes that combine flat and curved geometries.

Master Array Element Angular Optimisations

Optimising the adaptive angular tolerance can further increase scanning speed while maintaining defect detectability. The following C-Scans and histograms



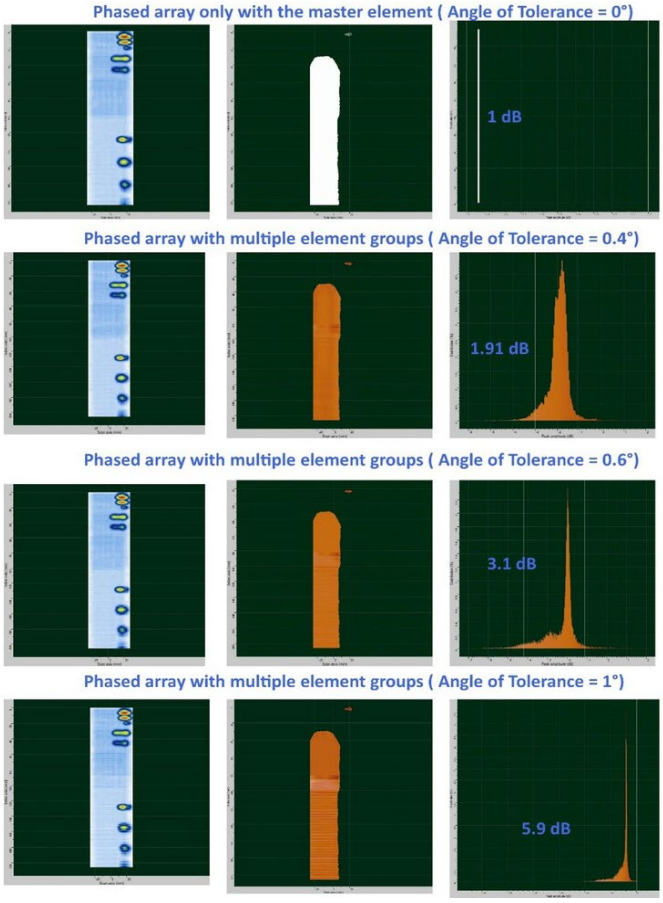
C-Scan results (a) UT (b) Adaptive Phased Array scanning.

were made by utilising the scan at an angle tolerance of 0° as a reference. The trends in pixel amplitudes from the reference scan can be compared with the scans of different angle tolerances. The resulting histograms represent the distribution percentage of pixels in terms of dB and the cursors are set to encapsulate the dB range of 95% of the C-Scan pixels. The irregularities in the C-Scan pixels and the wider spread of the histograms are proportional to angle tolerance underline the error caused by accepting beam angles that are further from the normal to the surface. Angle tolerance then can be optimised to find the compromise between the C-Scans quality and the scanning speeds.

Conclusion

In conclusion, automated 3D, enhanced by adaptive phased array scanning, provides critical tools for advanced ultrasonic phased array testing. These technologies improve the accuracy, speed, and thoroughness of flaw detection in critical components, contributing to enhanced safety and reliability in aerospace operations.

This article originally appeared on
www.ndt.net/search/docs.php3?id=30793



Evaluation of the Optimal Angular Tolerance for Adaptive PA Scanning.

NDT World Event Calendar

SINCE 2025

27 to 28 February 2025 | Singapore

Hosted by the Non-Destructive Testing Society Singapore (NDTSS), the fifth Singapore International NDT Conference and Exhibition will take place in February 2025. The conference includes a technical program that will present the latest research and technology developments as well as practical applications of NDT in all major industrial areas. The technical programme will feature keynote presentations from internationally-renowned industry leaders. The associated exhibition will emphasise the close links between research and development and the equipment and instruments used in the industry, focused on Industry 4.0 and additive manufacturing.

For further information, visit: **www.since2025.org/**

3rd International Conference and Exhibition on NDE 4.0

3 to 6 March 2025 | Bengaluru, India

The International Conference on NDE 4.0, a pivotal event initiated by ICNDT's Special International Group, focuses on the integration of Industry 4.0 technologies in non-destructive evaluation and inspection. This conference highlights advancements in robotics, drones, AI, machine learning, IIOT, augmented reality, and digital twins, revolutionising industrial inspections. Following successful events in 2021 and 2022, the third conference will be held in Bengaluru, India. It will feature an exhibition showcasing cutting-edge products and services, offering attendees opportunities to share knowledge, network, and accelerate NDE 4.0 adoption in their industries.

For further information, visit: **https://2025.nde40.com/**

Pan-American Conference for Non-destructive Testing

9 to 12 June 2025 | Ontario, Canada

The next Pan-American Conference for Non-destructive Testing (VIII PANNDT) will be held at the Fallsview Casino Resort at Niagara Falls in Ontario, Canada from 9 to 12 June 2025. The exhibition area will have space for over 100 booths. This valuable conference is a must-attend event for inspection, quality assurance, quality control, manufacturing, and non-destructive testing personnel. The program will feature presentations from leading researchers, technicians, companies, and organisations who will demonstrate the latest technologies, trends, tools, and techniques. The conference is being hosted by the Canadian Institute for Non-Destructive Evaluation.

For further information, visit:
www.panndt.org/panndtconference

ASNT Research Symposium

23 to 27 June 2025 | Indianapolis, United States

Hosted by the American Society for Non-destructive Testing, the ASNT Research Symposium is the premier event for the Non-destructive Evaluation Community. Make plans now to attend, present, and network as we hear about cutting edge research from some of the best minds in the field, spotlight up and coming researchers, listen to engaging award lectures, and network with peers and friends. With the theme of New Horizons: The intersection of technology, community, and collaboration, the symposium will look at how digitalisation, artificial intelligence, and automation are enhancing efficiency and accuracy in NDE.

For further information, visit:
https://asnt.eventsair.com/rs2025

ASNT 2025: The Annual Conference

6 to 9 October | Florida, United States

'Access Granted' is more than just a theme—it's your key to the future of NDT. Join industry leaders as we explore innovations, share insights, and open doors to the latest advancements in NDT. This must-attend event provides unparalleled networking, hands-on technology showcases, and an immersive experience designed to expand your knowledge and elevate your career. Hosted by the American Society for Non-destructive Testing, ASNT 2025 will be held at Disney's Coronado Springs Resort, with over 100 technical sessions, 210 exhibitors and 2,200 attendees.

For further information, visit:
https://asnt.eventsair.com/asnt-2025

Assessing FRP Composites in Water and Wastewater System Infrastructure

Regular Inspections are Critical for FRP Infrastructure Assets

In cities and towns across Australia, FRP assets are typically decades old. Some are nearing the end of their service life — if they're not leaking already. This is a stark reminder of the need to pay closer attention to inspection and ongoing maintenance and replacement planning.

Bridging the Gap: the Role of FRP Composite Materials

Faced with gaps in funding and resources, asset engineers must balance planning for future growth with the need to keep infrastructure functioning and maximise its lifespan. They must also plan for minimal service interruptions due to inspections, maintenance, or equipment replacement.

FRP composites are already widely used in mineral processing industries, potable water and wastewater systems for pipes, storage tanks, scrubbers, ducting and other equipment.

While best practices are continually evolving to meet those challenges, it's clear that FRP technology has a larger role to play in bridging the infrastructure gap. This is now possible due to advances in the design, construction and Fitness For Service assessment of these materials.

Applications for FRP

FRP is often the material of choice for tanks, scrubbers, piping and ducting used in corrosive fluids. FRP materials often provide better corrosion resistance at lower cost than stainless steel.

Most asset management programs require periodic inspection and evaluation of the equipment's remaining service life (RSL). However, while there are established objective methods for determining RSL of equipment made from steel, there are no consensus standards that apply to inspecting FRP.

With ducting and piping, traditional techniques that rely on visual inspection are impractical and provide limited insight, so often no inspection occurs and a failure happens without warning.

RPC's UltraAnalytix® NDT system is a proven, non-intrusive and non-destructive evaluation method that provides objective data to evaluate the current condition and RSL of FRP equipment.

Drinking water applications for FRP

In addition to pipelines and storage tanks, FRP composites are used to make reverse osmosis (RO)

pressure vessels used in desalination facilities that supply potable water.

This technology has been around for decades, so there are potentially tens of thousands of these units worldwide that may be nearing the end of their service life. However, while design and construction codes cover how RO vessels must be manufactured, they provide no guidance for determining fitness for service.

Collaborative research between RPC and UTComp demonstrated the value of UltraAnalytix in providing a fast, reliable, and cost-effective method for determining the Fitness For Service of RO vessels.

Regular inspections using the UltraAnalytix system could save the desalination industry billions of dollars by reducing losses of a valuable resource (water) through leaks and other failures, improving reliability, increasing operational uptime and lowering capital replacement costs.

A wake-up call for asset management and inspection

UltraAnalytix non-destructive testing (NDT) is a fast, accurate, safe and cost-effective way for asset owners to assess their FRP assets while avoiding unnecessary downtime and replacement costs.

Disclaimer: this article was provided by RPC.

5 Great Ways the New OmniScan™ X4 Keeps You Ready for What's Next

The OmniScan X4 is Evident's newest ultrasonic flaw detector, a rugged all-in-one NDT inspection tool that allows operators of all skill levels to quickly and accurately detect even the most challenging flaws.

BY TOMMY BOURGELAS

The OmniScan X4 is lightweight, engineered for fast and easy use, and equipped with a full range of phased array ultrasonic testing (PAUT) capabilities. All models include total focusing method (TFM), phase coherence imaging (PCI), and plane wave imaging (PWI) technologies.

As portable and versatile as it is powerful, the new OmniScan X4 is designed to help boost your productivity, increase your confidence in assessments, and help you identify damage to welds and components earlier than ever before.

Let's take a closer look at its features, capabilities, and benefits. Here are five great ways the OmniScan X4 can make an immediate impact on your efficiency and workflow, your ability to make confident decisions, and your capacity to continually expand your capabilities.

Data acquired during a multigroup phased array inspection of a weld.

1. Assess With Certainty, Supported By Every Ultrasonic Technique Evident Has to Offer

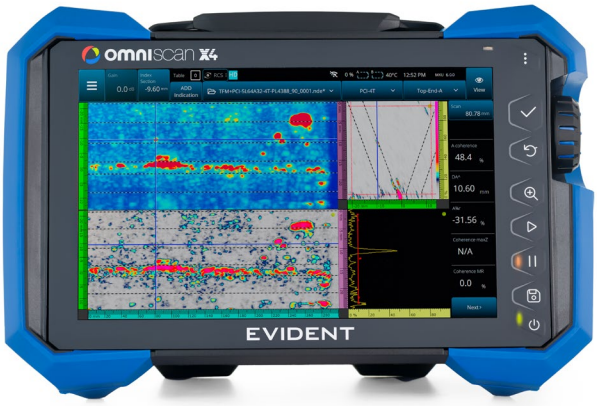
The OmniScan X4 is a comprehensive multitechnology toolbox that gives you access to today's most advanced PAUT techniques as well as powerful focusing capabilities. This enables to harness multiple NDT tools—and gather as much data as possible to support your assessments.

The OmniScan X4 software's easy-to-navigate setup workflow and parameter menus make advanced phased

Corrosion mapping setup combining Evident's SteerROVER™ scanner, HydroFORM™ scanner, and the OmniScan X4 flaw detector.

array, TFM, PCI, and PWI straightforward to use, even for new users. Leveraging these techniques in addition to PAUT helps you achieve consistently reliable results and make definitive decisions about the extent of cracking or corrosion. Having multiple imaging and measuring tools at the ready increases your ability to confidently identify and evaluate the severity of damage before it becomes critical, protecting asset and infrastructure integrity.

2. It's the Fastest and Most Powerful Omniscan Ever



View TFM and PCI data from both sides of a weld using two probes mounted on a scanner.

With a faster processor, expanded RAM, and advanced imaging tools, the OmniScan X4 is quicker, more powerful, and more responsive than any previous models. This means you can rapidly process large data sets and experience near-instantaneous software reactivity.

- Twin TFM/PCI delivers clear imaging of difficult-to-detect flaws from both sides of a weld at the same time, helping improve the efficiency of your data acquisition.
- Improved processing power can compute TFM in real time and up to 3x faster than predecessor models (depending on the configuration and use of sparse firing).
- A 1 TB solid state drive enables extended data acquisition without interruption, allowing technicians to inspect larger parts without pausing to transfer files.
- High-quality PA, TFM, and PCI images minimize false echoes, require fewer manipulations, and significantly reduce the time and effort needed to clean up scans.

3. It's Based on Software You Already Know and Use

With the OmniScan X4, you can skip the training—the onboard MXU software 6.0 reuses all the features you're already familiar with from the OmniScan X3 series. In addition, all OmniScan files are compatible, meaning you don't have to redo setups (some restrictions on legacy OmniScan MX2 and OmniScan SX files).

Evident's complimentary OmniPC™ data analysis software is designed to meet most PAUT, TOFD, and TFM analysis needs. Its familiar OmniScan user interface eases the learning curve, and convenient shortcuts speed up navigation and data analysis. Data can be adjusted using multiple tools to correct for mistakes at acquisition or to improve reporting quality.

4. It's Designed to Evolve Without Having to Reinvest

With free software updates and expanded possibilities for new application design, the OmniScan X4 empowers you to continuously evolve and grow.

The OmniScan X4 includes free quarterly MXU software updates on all models—delivering new customer-focused features that expand capabilities, adapt to future inspection needs, and keep you ahead of industry standards. With every MXU software update, your OmniScan X4 unit increases in value.

With the OmniScan Black Box app installed on the OmniScan X4 unit, WeldSight Inspection software can control the data acquisition, and the data is routed directly to the laptop.

With the OmniScan Black Box app installed on the OmniScan X4 unit, WeldSight Inspection software can control the data acquisition, and the data is routed directly to the laptop.

You can also access future technological advances without having to reinvest. Raw elementary A-scans from FMC data can be used to reconstruct TFM imaging or other image reconstruction patterns, enabling the

development of new applications (64:128PR model with the OmniScan Black Box app and the NDT Device API). With the OmniScan X4, you can continually expand and develop your inspection capabilities to achieve better results in an increasingly demanding NDT market.

5. It's Easily Connected to Collaborators Anywhere on Earth

The OmniScan X4 RCS offers remote collaboration tools, such as sharing live data acquisition images and enabling remote control of the instrument.

The OmniScan X4 offers a multitude of convenient ways to stay connected, quickly share critical files, and keep your device updated with today's newest software.

Onboard Wi-Fi® 6E enables faster transfer rates and makes wireless data transfer more convenient (restrictions in some countries).

All of our latest software releases can be obtained wirelessly as soon as they are available.

If you own a Microsoft OneDrive account, you can share your OmniScan X4 acquisitions and screenshots as soon as you have produced them (wireless connection needed at inspection site).

You can connect your mouse or keyboard via Bluetooth® 5.3 and enjoy the convenience of wireless remote control—perfect for training or writing instructions.

Our X4 Remote Collaboration Service (X4 RCS) allows a remote collaborator to control the unit and host a video conference with participants almost anywhere on earth. This enhances field inspections and training by letting you share your inspection conditions and your display, enabling immediate collaboration. Use X4 RCS to solve roadblocks and harness the expertise of offsite colleagues as needed.

Be Ready for What's Next

Evolve well into the future with the new OmniScan X4, a phased array flaw detector that's expanding the possibilities of inspection by combining fast, accurate flaw detection, advanced imaging technology, and reliable performance with the ability to continually grow and diversify. Engineered for speed and simplicity, the OmniScan X4 is an agile, lightweight inspection solution that empowers you to confidently detect and analyze damage and defects, streamline your processes and workflows, and always be ready for what's next.

Disclaimer: this article was supplied as part of a paid advertising package.

Tommy Bourgelas

Executive Director, Evident Global Product Management, Advanced NDT Products

Tommy Bourgelas has worked at Evident for over 24 years. Prior to his current position, which includes overseeing the OmniScan™ product line, he worked as a product manager for other in-service portable NDT product lines, including the OmniScan ECA, MultiScan MS5800™, NORTEC™, and BondMaster™ inspection devices. Throughout his career, Tommy has contributed to the development of probes and applications, worked to improve existing products and software features, and has performed numerous trainings.

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SHAPE THE FUTURE

VOLUNTEER FOR YOUR LOCAL AINDT BRANCH COMMITTEE TODAY

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- **Develop** professional skills and gain unique experiences
- **Influence** the direction of our industry and contribute to meaningful change

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Alliance Solutions Group (ASG)

ASG NDT Corrosion Under Insulation Solution: Teledyne ICM GoScan C-View

Corrosion under insulation (CUI) is a critical issue in various industries, often leading to costly repairs and safety hazards. At ASG NDT Supplies, we are proud to offer a cutting-edge solution: the Teledyne ICM GoScan C-View.

What is the GoScan C-View?

The Teledyne ICM GoScan C-View is a state-of-the-art, non-destructive testing tool specifically designed for detecting corrosion beneath insulation. This advanced technology utilizes Real Time Radiography to identify differentials that indicate corrosion presence, providing a non-invasive method to assess the integrity of insulated pipes and equipment.

Key Features

1. GoScan C-View: A light weight ruggedised real time X-ray imaging system specifically designed for hand-held inspection such, among other, Corrosion Under Insulation (CUI) inspection. It includes a high speed and high-resolution CMOS imager, and a battery-operated 70kV X-ray tube designed for portable field operation. The video imaging system captures images and displays them on a handheld display in real-time.
2. User-Friendly Interface: With an intuitive touchscreen interface, operators can easily navigate through the software, making inspections more efficient and user-friendly.
3. Data Analysis: The system offers comprehensive data analysis tools, allowing operators to generate detailed reports that aid in maintenance planning and decision-making.

Real-World Applications

Industries such as oil and gas, chemical processing, and power generation can significantly benefit from the GoScan C-View. For instance, regular inspections can help facilities proactively address CUI, reducing downtime and maintenance costs.

For further information, visit: **asgndtsupplies.com**

AXT

Protec Automatic Film Processors from AXT

So, you've been out on site all day and shot dozens of exposures of regions that might be at the initial stages of failure. When it comes to developing those valuable films, make sure you put your trust in Protec. The brand to trust when it comes to film processors.

Designed and built in Germany, Protec has been manufacturing film processors since 1984. With a host of features optimised for image quality and consistency, Protec film processors are compatible with all film brands, while automation removes the possibility of operator error. Some of these features include:

- Film surface detection for calculation of replenishment rate
- Intermediate film surface detection avoiding carry-over of chemicals

Their range includes three models to suit your requirements:

- Compact 2 NDT: For higher throughput labs
- OPTIMAX 2010 NDT: For labs with low to moderate throughputs
- Optimax 2010 Mobile: When you need to take your lab to the site

For all your radiographic needs, contact AXT who can help with tube heads from Rigaku and Comet, FujiFilm industrial X-ray film and chemicals, SE International radiation detectors as well as film processors from Protec.

For further information: **www.axt.com.au/suppliers/protec/**

International Tube Testing

Active in the NDT industry since 1978, Charlie Panos has over 40 years of experience. He provides International Tube Testing (ITT) was established by Charlie Panos in 2000. With over 40 years of industry experience, Charlie has in-depth expertise and qualifications in the engineering, testing and inspection industry.

ITT was formed to fill a growing need for accurate, dependable specialised engineering testing services. ITT provides specialised IRIS and RFT tube testing and has tested almost every boiler design in the process, petrochemical and power industries in Australia, the Pacific Islands, Papua New Guinea, Indonesia, Malaysia, Philippines and India.

The company can test tube sizes from 16mm up to 200mm, including straight tubes and tubes with bends for industries as diverse as pulp and paper, fabrication, maritime and aerospace.

ITT prides itself on delivering personalised, ethical service every time and has the field proven experience, technology and determination to ensure all your requirements are exceeded.

For further information, visit: **tubetesting.com.au**

OMS

OMS is the all-in-one NDT business management platform—an advanced LIMS and ERP software, verified for vulnerability and boosted with AI (Augmented Intelligence). It is designed to streamline laboratory Operations Management Systems in compliance with ISO 17025, ISO 17020, NATA and ISO 9001 standards.

Since 2009, OMS has delivered over two million use-hours. It can save businesses up to $200,000 per annum per branch by eliminating most IT hardware (computers, servers and laptops), software (Windows, MS Office and anti-virus) and human resource related costs such as non-conformity reports, quality assurance and rework costs.

OMS works 24/7 to automate mundane repetitive tasks in NDT, inspection, metallurgy, mechanical and chemical testing, and hydro pressure test companies. One click generates a report that complies with standards, without transcription errors, executes secure signing of report and sends emails without an external email program.

OMS includes automation for accounts bookkeeping, timesheets, productivity reports, automatic debt collection, assets data and calibrations, staff inductions and certificates, document sharepoint, CRM, quotations, and more.

OMS saves you time and money, replacing several fragmented generic applications at the cost equivalent of one cup of coffee per day. OMS also delivers continuous automation and the regular addition of brand new features at no extra cost, created by its 30+ strong team of developers and subject matter experts. OMS is available at zero upfront cost for implementation, customisation, training, and has no lock-in contract, and zero exit fees.

For further information, visit: **omssoftware.com.au**

Simplifi NII

Volta 2: Redefining Long-Range Inspection

When it comes to long-range ultrasonic testing (LRUT), Volta 2 sets a new standard. This next-generation Electro-Magnetic Acoustic Transducer (EMAT) unit eliminates the need for traditional transducer rings, making it faster and more adaptable for real-world inspections.

What's the big deal? Unlike conventional LRUT systems, Volta 2 is fully flexible, working seamlessly in tight spaces, complex geometries, and restricted access areas where traditional tools struggle. No need for bulky fixtures—just place and inspect.

But here's where it really shines: defect sizing. Equipped with advanced signal processing and defect quantification tools, Volta 2 provides precise, reliable data on corrosion, cracks, and thickness variations. No guesswork—just actionable intelligence.

Designed for efficiency and portability, Volta 2 minimizes setup time while maximizing coverage. Whether it's pipelines, pressure vessels, or structural components, this contactless EMAT solution delivers high-performance inspection without couplants or surface prep headaches.

Smaller. Smarter. Stronger. Volta 2 isn't just an upgrade—it's a revolution in LRUT. Ready to leave the old rings behind?

Visit Simplifi NII at the Energy Exchange Australia Conference from 11 to 13 March 2025.

For further information, visit: **simplifi-nii.com.au/emat-%2F-lrut**

Wood

With 35,000 professionals across 60 countries, Wood PLC is one of the world's leading consulting and engineering companies operating across the energy and resources markets.

Here in Australia, the broad range of services they offer their clients includes machinery vibration and lubrication analysis for all types of equipment, across all industries. Their certified personnel can provide end-to-end routine measurement, analysis, and reporting; alternatively, we will supplement your people to match your needs. Wood is vendor-agnostic and works with a wide range of wireless, wired, and portable hardware and software platforms to provide routine and troubleshooting services to the very highest level.

But they do not stop at finding and diagnosing problems – from skid to piping to vessel, they have an unrivalled track record of engineering actionable solutions. Wood also offers machinery alignment and balancing, optical motion amplification, thermography, bearing failure analysis, root cause analysis facilitation, FEAs, flow analysis, noise studies and much more.

And they practice what they teach. Wood offers vibration and lubrication analysis training per ISO 18436 Parts 1 to 4, with optional AINDT certification. Their public courses are delivered in Perth and Brisbane by active principal practitioners with decades of experience; alternatively, they can provide bespoke courses at your site or venue. Wood currently offers LCAT1, VCAT1 and VCAT2 training, and will be expanding their catalogue soon.

For further information: **vdn.woodplc.com**

EN DE TEK Australia

EN DE TEK Australia's industrial borescope systems have always excelled in saving time and money for their customers. With cutting-edge technological design enhancements and flexible ergonomic features, their borescopes lead the industry. EN DE TEK Australia continuously upgrades their hardware to ensure top-notch performance in non-destructive remote visual inspections.

Recent improvements in resolution, tip articulation, illumination, and modularity make our borescopes ideal for complex inspections across various fields, including pipe and tube inspections, engine gearboxes, building and pest control, industrial manufacturing, tanks and vessels, underwater inspections, steel mills, border security, police, defence, and aviation.

They offer flexible probes from 1.8mm to 8.0mm in diameter with lengths ranging from 1 Mtr to 15 Mtr with two-way and four-way tip articulation. These probes can be customised upon ordering with varying viewing directions and depths of field. The probes are all designed to be modular for quick field swapping at the job site. All pixel resolutions vary across the range from 160,000 up to 1080P and all probes offer high-intensity LED illumination.

Newer and more sophisticated versions of their videoscope range such as their Dellon VX, GL, and SVPro provide 2D, and 3D high-definition dimensional measurement in real-time to measure cracks as fine as silk threads. Three-dimensional colour modelling facilitates intuitive analysis.

For further information: **endetek.com.au/borescopes**

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