



THE BRITISH
INSTITUTE OF
NON-DESTRUCTIVE
TESTING

INTRODUCING

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SENIOR TECHNICAL AND
CERTIFICATION ENGINEER

British Institute of
Non destructive Testing



TECHNICAL
EXPERTISE



CERTIFICATION
EXCELLENCE



SUPPORTING INDUSTRY
STANDARDS

...engineering safety, integrity and reliability

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Presentation aims and objectives



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FROM CLASSROOM TO CLOUD

30 YEARS OF EVOLVING TEACHING. ENDLESS POSSIBILITIES.



THEN

In the Classroom.
Same time. Same place.



NOW

Connected Anywhere.
Learning Without Limits.



ANYWHERE



ANYTIME



ANY DEVICE



ANYONE



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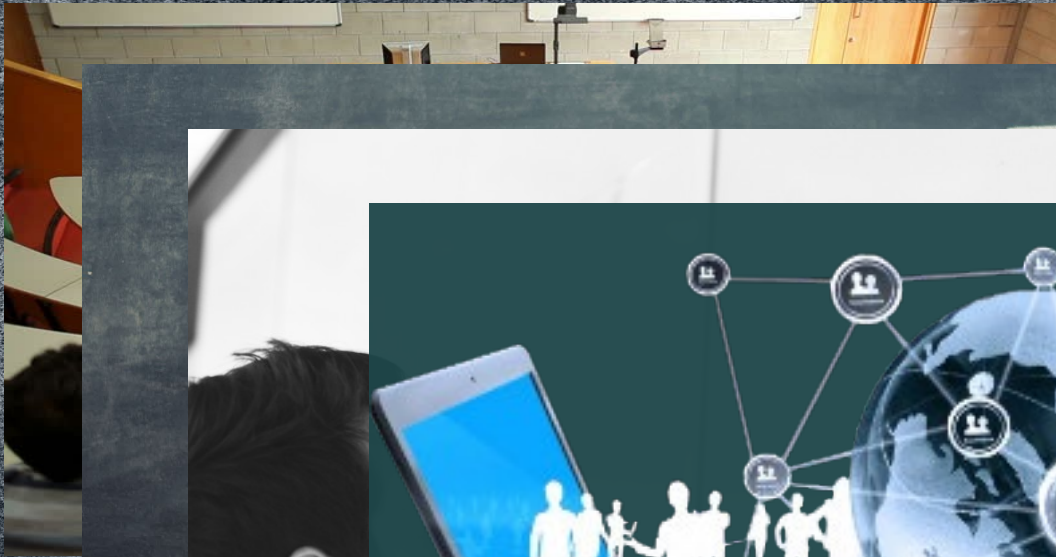


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Growing Demand for Qualified Non-Destructive Testing (NDT) Engineers



E-Learning & Blended Learning



- ✓ *Global Reliance on Advanced Materials*
- ✓ *Need for Certified NDT Professionals*
- ✓ *Flexible & Scalable Training Delivery*
- ✓ *Compliant with Industry Standards*



Common factors



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Delivers Quality. Builds Competence. Ensures Confidence.

WHAT MUST BE CONSIDERED

WHEN USING TS 25108 REQUIREMENTS

FOR THE DELIVERY OF NDT METHOD TRAINING



1. LEARNER ENGAGEMENT

- Interactive and relevant learning experiences
- Clear learning outcomes and expectations
- Encourage collaboration and feedback
- Promote motivation and retention



2. PRACTICAL TRAINING

- Hands-on experience with real or realistic equipment
- Adequate practice opportunities
- Qualified instructors and suitable resources
- Safe and controlled training environment



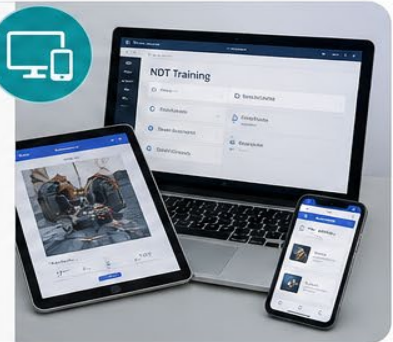
3. ASSESSMENT INTEGRITY OF STUDENTS

- Fair, consistent and impartial assessments
- Assessments aligned with TS 25108 requirements
- Prevent malpractice and ensure authenticity
- Evidence-based decisions and proper records



4. TECHNOLOGICAL ALIGNMENT

- Leverage modern technology to enhance learning
- Use of iPads, laptops, mobile phones and digital tools
- Access to e-learning, simulations and digital content
- Ensure technology supports learning objectives and accessibility



TS 25108

Quality NDT Training
for Competent
Professionals



Adhering to TS 25108 ensures training is structured, consistent and credible—developing competent NDT professionals for a safer and more reliable world.



QUALITY



COMPETENCE



CONFIDENCE



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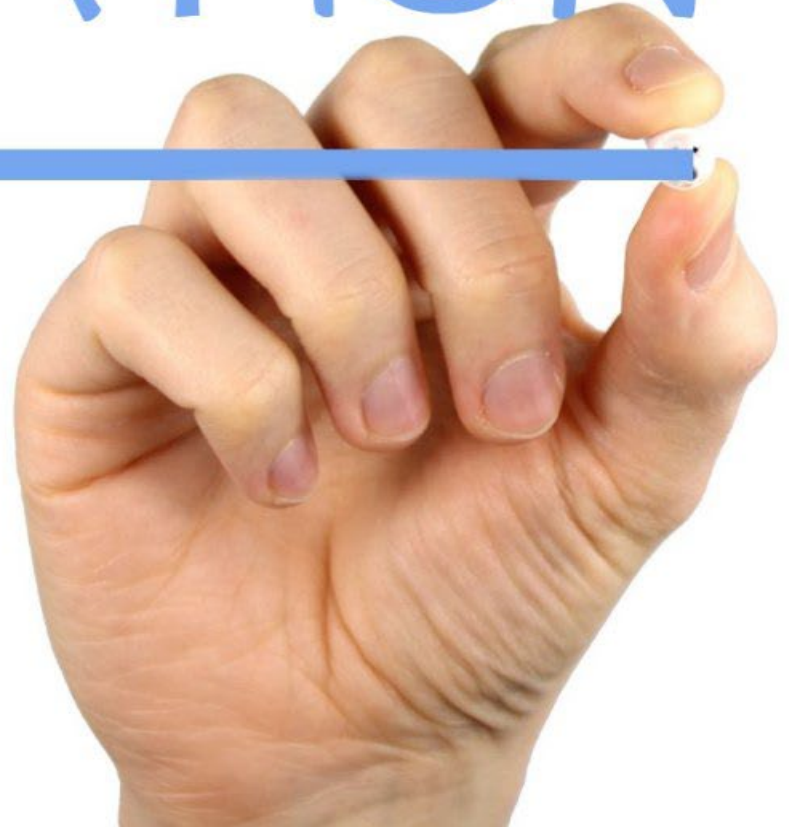
LEGISLATION

Requirements

Standards

Specifications

Codes

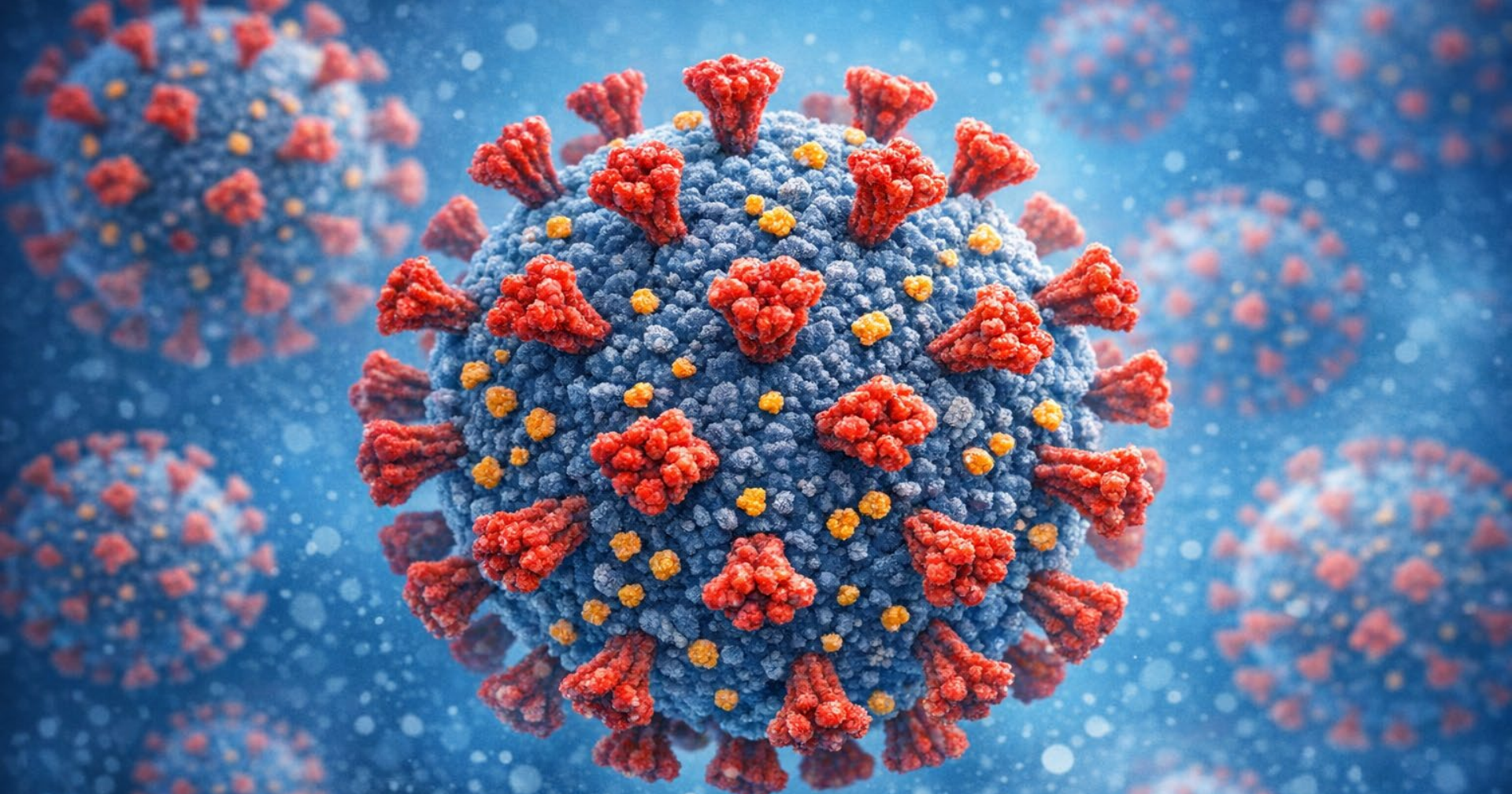


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Covid 19 Pandemic - January 2020



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CAP 1933: *Training Evolution*

CAP 1933

Guidance on Web-Based,
Distance Learning, Simulation & Reality

Published October 2020



Online Learning



Virtual Classrooms



Simulation & VR Training

**Ensuring Technical Competency
During the Covid-19 Pandemic**



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CAP 1933

www.caa.co.uk



Provides guidance in line with UK Regulation to support the introduction of Training procedures and associated quality systems & provide agreed standards for:

- Web-based training (WBT)
- Distance learning
- Use of Simulators
- Synthetic training aids
- Virtual reality



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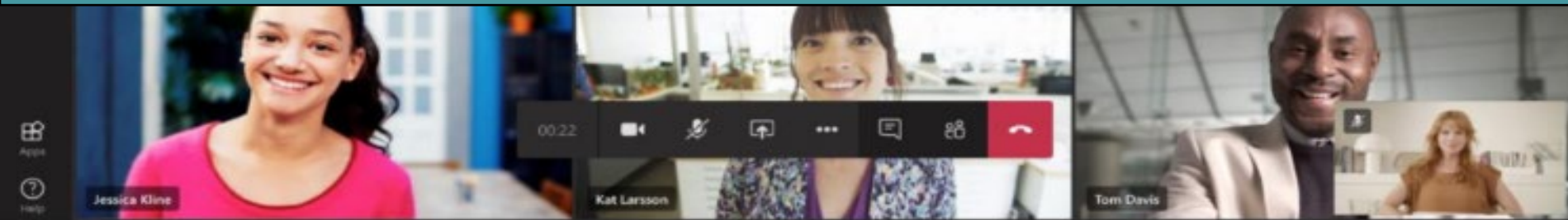


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CAP 1933 consideration:

- **Max 20 students per session**, to maintain interaction.
- **Strength of the internet connection.**
- **Software** must support the class size, from both the ATO's and student's perspectives.
- **Monitoring engagement.**
 - Instructor supported by additional staff members ensuring students remain on camera and, engaged?



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web-based systems
should be:

Private and secure.

Participants should be able to fully
interact with their instructor

Support instant messaging (IMS)

Be in a location and time zone
that is conducive to learning.

(IMS) Questions asked openly or privately, without interrupting the instructor



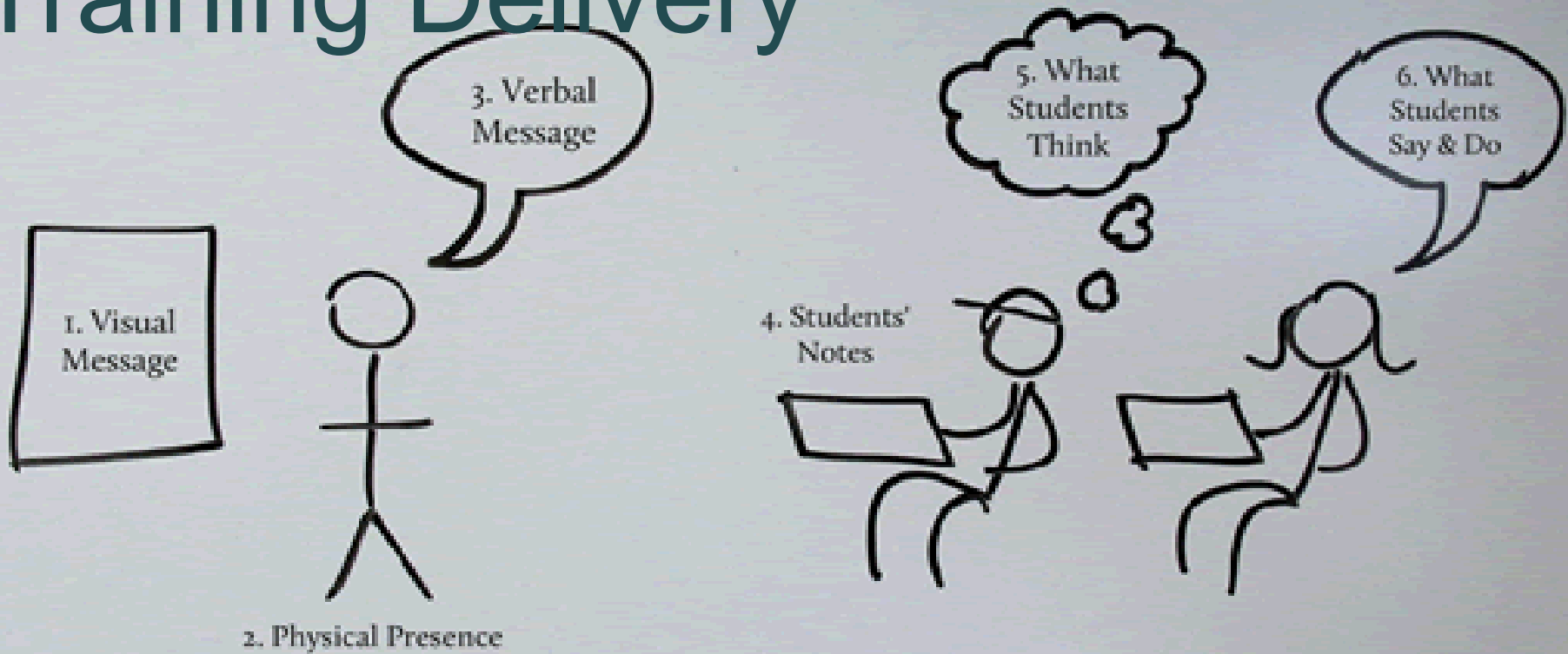
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Training Delivery



“Synchronous / Asynchronous”
Or both.



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Synchronous Learning

Instructor and students interact at the same time (real time). i.e.

- Traditionally classroom-based sessions, presentations, symposiums.
- Both classroom-based and distance learning training may be carried out using synchronous learning.



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E-Learning & Blended Learning

Procrastination

The Challenge of Asynchronous Learning

When Flexibility Meets Distraction



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ISO 9712 knowledge requirement

Products and materials.

Fabrication process.

Defects:

- During manufacturing / in-service conditions.

Correct selection of NDT method & technique to reveal the required discontinuities.

Pre- and in-Service industry sector – which includes manufacturing.



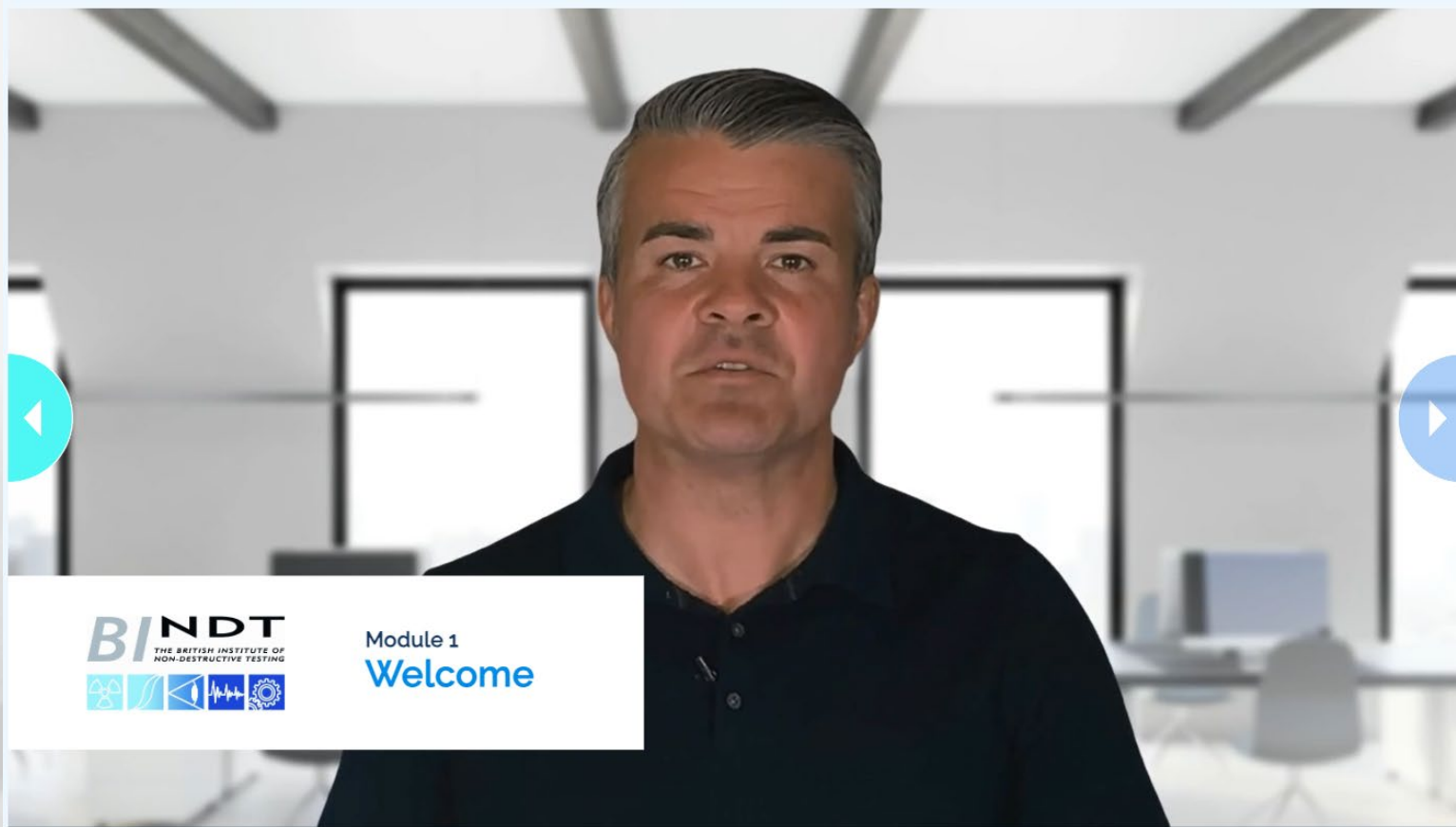
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Video presentations



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Image credit - <https://www.hrconnect.cl/desarrollo/software-aprendizaje-formacion-potencia-learning-management-system/>

LMS

Learning Management Systems



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Simulation:



Image credit <https://www.stengg.com/en/defence/training-and-simulation/>

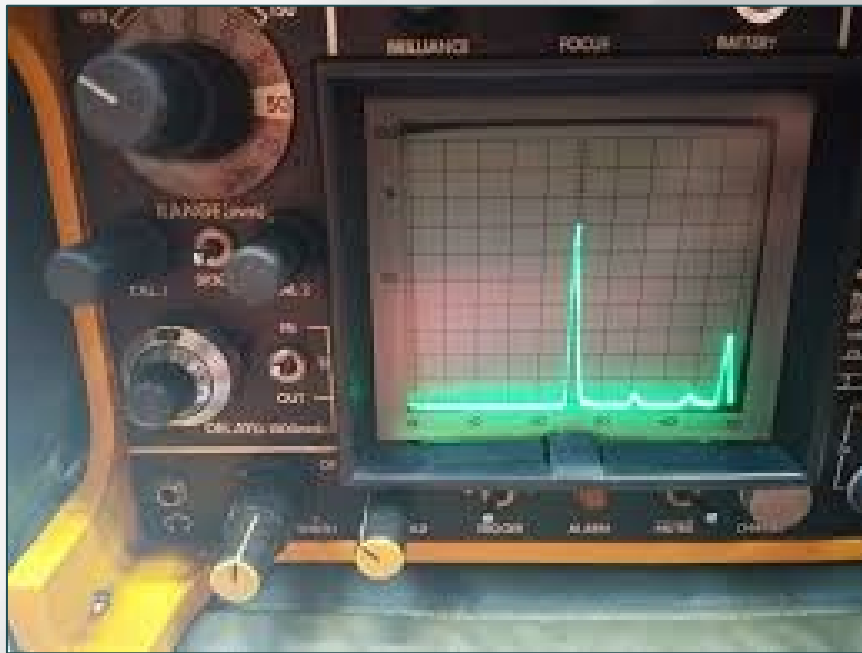


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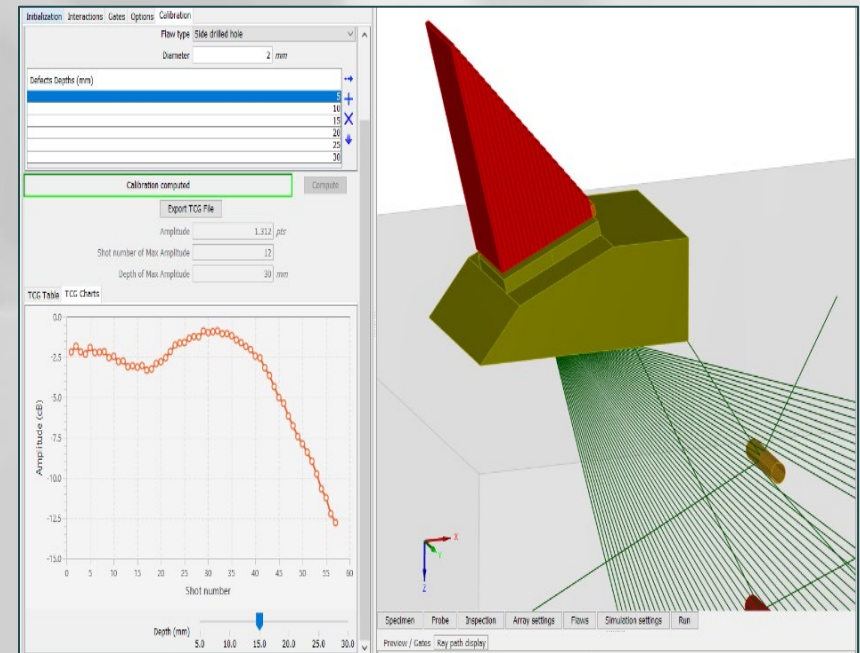


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Sonatest UFD 7A



Simulation

CAP 1933 confirms: The maximum permissible use of simulation for training purposes shall be $\leq 50\%$.



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Image credit EXTENDE NDT

Synthetic training devices



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RADIATION SAFETY

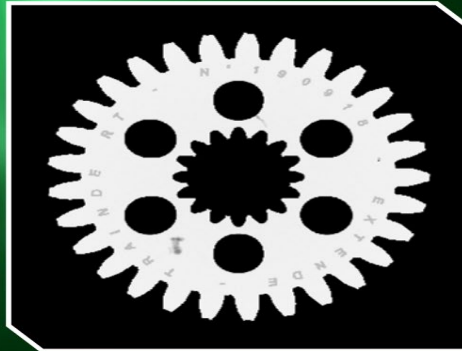


FIND ALL THE TOOLS
OF YOUR TRADE IN
TRAINEE RT :

- X and gamma sources
- Common films and shooting techniques
- IQIs and markings

UNPRECEDENTED REALISM,
FROM PROCEDURE
TO RESULTS

- Display the image of the shot from a database of thousands of simulated images
- Analyze the shot with integrated tools (optical density, dynamic of the image, ruler...)



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Virtual reality



Image credit <https://www.miplsolns.com/virtual-augmented-reality-simulations.php>



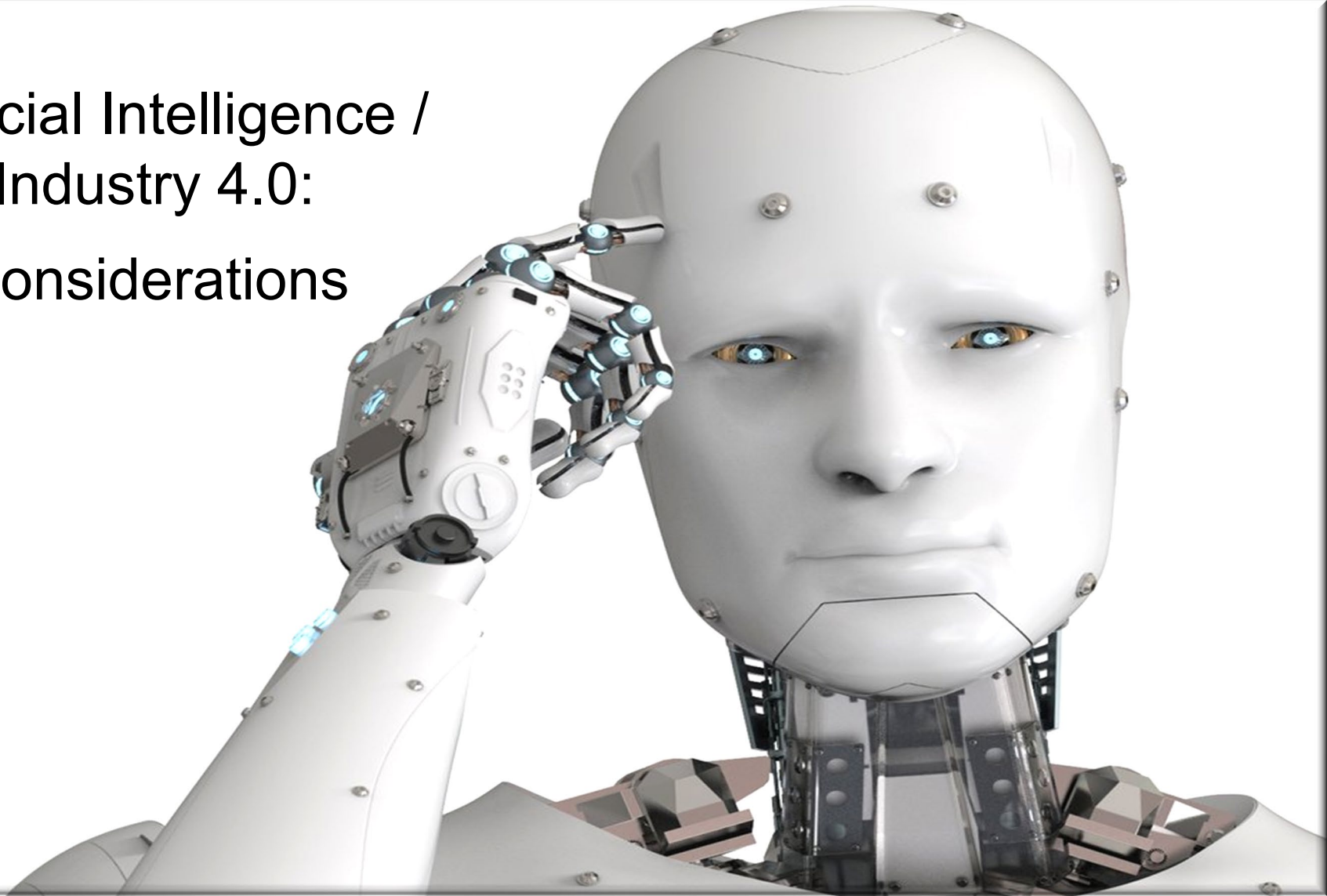
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Artificial Intelligence / Industry 4.0: Considerations



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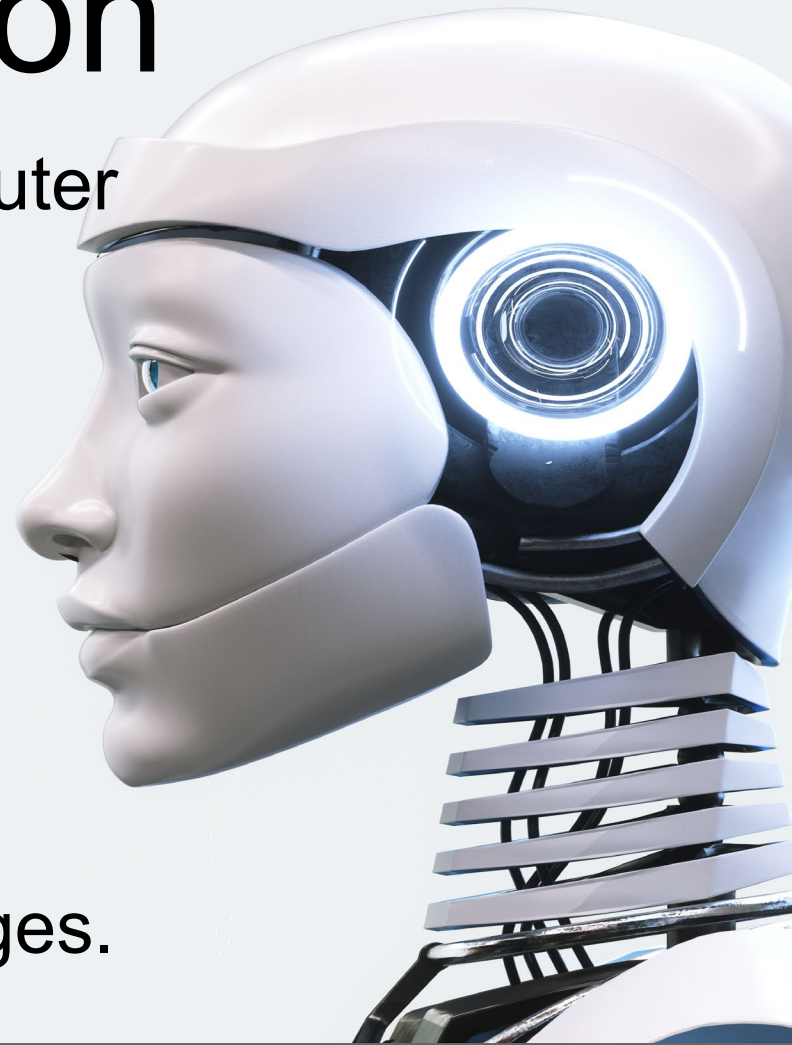
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Definition

Theory & development of computer systems:

Able to perform tasks requiring human intelligence, such as:

- Visual perception
- Speech recognition
- Decision-making, and
- Translation between languages.



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Considerations

- Develop training for AI / NDE 4.0.
- Moral, ethical, industrial and legal requirements.
- At what Level, PCN L1, 2, 3, Degree or other ?
- Input from equipment manufacturers
- Engagement across all industry sectors
- Delivery platform – Remote or in person
- How do we qualify delivery of training



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PCN/24 Scheme Governance



UKAS is the National Accreditation Body for the United Kingdom. Appointed by government, to assess and accredit organisations that provide services including certification, testing, inspection, calibration, validation and verification of processes.

Help



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Thank you for your time, any questions?



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