



Scientific and Technical School – [NDT1]: “State of the art and emerging technologies in NDT and SHM” + Scientific and Technical School – [NDT2]: “Certified technologies for aircrafts inspection”

18-22/09/2017

TWI Ltd, Cambridge, UK

Monday September 18th 2017 – Board Room Building 1

2 PM – 5 PM

TWI’s Lab and Facilities Tour

Tuesday September 19th 2017 – Board Room Building 1

TWI Lessons

9 AM – 1 PM

1. Structural Health Monitoring
 - SHM Techniques and Applications
 - Conventional Ultrasonic
 - Guided Waves
 - i. History and background
 - ii. Technology and principles
 - iii. Application and industrial techniques
 - Comparison Conventional US and GW
2. SHM in Aerospace
 - Faults in Aerospace applications
 - Corrosion in Aerospace applications
 - NDT in the aerospace industry
3. Conclusion

Mr. Graham Edwards

Break and lunch time

NDTonAIR

H2020-MSCA-ITN-2016 -
GRANT 722134



TWI Ltd

First Training Event

18-22 September 2017
Cambridge, UK



2 PM – 5 PM

ESR Round Table (short presentations)

Project ESR

Wednesday September 20th 2017 – Board Room Building 1

Warwick Lessons I

9 AM – 1 PM

1. Basic NDT
 - MPI / FPI
 - Eddy current
 - MFL
 - Radiography
 - Ultrasound (wave equation - modes S, L, SV, SH, Lamb, Rayleigh)

2. Ultrasonic transducers
 - Construction
 - Materials
 - Electrical properties
 - Frequency

3. Non-contact method over view
 - Air coupled
 - Laser
 - EMAT

Prof. D. Hutchins

Break and lunch time

Warwick Lessons II

2 PM – 5 PM

1. Eddy current NDT
 - Basic principles of electromagnetic induction
 - Maxwell's equations
 - EM wave equation
 - Skin depth
 - Eddy current equation
 - Techniques for calculating eddy currents
 - Examples of eddy current systems

2. EMATs - basic overview
 - Lorentz force (using eddy current equation)

Prof. S. Dixon



- Magnetostriction force
 - Magnetisation force
 - self-field generation
3. different EMAT designs
- Compression wave
 - SH normal incidence
 - Lamb & Rayleigh (intro to guided waves)
 - SH guided & angled bulk
 - Torsional

Thursday September 21st 2017 – Board Room Building 1

Brussel Airlines Lessons I

9 AM – 1 PM

1. Aircraft structure & maintenance
2. Scheduled maintenance
3. Aging effects on aircrafts
4. NDT in aviation

Dr Andy Vanaerschot

Break and lunch time

Brussel Airlines Lessons II

Airbus Lessons

2 PM – 5 PM

1. Workshop on how damages are assessed and which NDT technique should be selected in aircraft maintenance

Dr Andy Vanaerschot

Friday September 22nd 2017 – Room G3 / Board Room Building 1

9 AM – 1 PM

General Assembly (*Board Room*)

ESR Informal Meeting and Election of the ESRs representative in the Supervisory Board(*Room G3*)

