

Session 2 Opportunities for benefit from NDT

2a Opportunities for benefit from NDT Dr Barbara Gordon, UoB

2b Design for manufacture – NDT opportunities Prof Kevin Potter, UoB

2c Breakout sessions

2d Breakout de-brief

2e Panel session - What does success look like?

2e. Session 2 Panel discussion

Panel members:

Dr Tim Barden (Chair),

Dr Martin Gaitonde,

Prof Phil Irving,

Dr Simon Waite,

Dr Barbara Gordon.

Prof Kevin Potter

Taking the 'opportunities' from the talks and the breakout groups...

What does success look like in each of the areas proposed?

What will provide most benefit?

What is highest priority?

- Productivity increase.
 - 100% right first time
 - Rate of production, especially when NDT is difficult
- SHM – need to find location of defect. NDT expensive for large area. Intervals. Not sure about failure modes. Use SHM as integral part of life-cycle. Integration.
- NDT as part of design process to take out time and cost.
 - Eg CT to show when in process things changed.
 - Helps reduce testing within pyramid. Improved characterisation.
 - Linking levels of pyramid. Reduce time to first flight.
 - Understanding loads.

What is highest priority?

- Whatever we do – do not reduce level of safety
- Solve right problems. Understand failure modes, design.
- Are we clear what to measure?
- How to measure current risks.
 - Some are long-term risks to safety.
- Can better NDT reduce production/operational cost?
- Strategy: Safety reliability
- False positives – danger. Need to do PFP and POD.
- Process should capture prior to NDT.
- Whether defects matter. Acceptance criteria – methods are old. Cast in stone. People reluctant to change.
 - Should NDT engineers challenge this?
 - Relax acceptance criteria based on location?
 - Could zone criteria on structure but needs digital twin model.
 - Sufficient test data may exist.
 - Many concessions allowed. Are these captured in quality standards
 - Or make lighter rather than relax acceptable size.
 - Still do not have experience to design comp a/c to composite experience
 - When we do that, will we retain the safety level?
- Keep safety same and stress structure more?
- If could produce slow growth – would it help?
 - Yes but not if we lose other benefits.
 - HiperDuct – pseudo-plastic behaviour – early days. Hierarchical levels within structure.
 - ALM. Manipulate materials. GLARE!
- Design rules or material manipulation? Which comes first?
- Productivity –