Welcome and Introduction

Robert A Smith
Past President, BINDT
Workshop objectives

• Aims:
  • Brief the NDT community on the ways in which NDT could help to increase the use of composite materials in high-volume car manufacture.
  • Define what success will look like.
  • Document the resulting requirements.
Regulatory questions

• Do regulations apply to just safety or are we including environmental requirements?
• Vehicle safety is based on decades of experience, which we do not have for composite vehicles, or do we?
• Which aspects have to be revisited for composites?
• How will MOTs cope with composite vehicles?
  • There is no rust to detect but an impact could have severely decreased the strength and yet be invisible to the eye.
• What will be the design-limiting factor for road vehicles?
  • For aircraft it is mid-air bird strikes and hail storms, not tiny impacts creating barely visible dents.

Ultrasonics and NDT Group
Once requirements have been established for composite components, what manufacturing test strategy will be acceptable to ensure they continue to be met

- sample 1 in 100 for some kind of dimensional conformity,
- sample 1 in 1000 for a tear-down or for X-ray CT or 3D characterisation of the microstructure of the composite?

What structural integrity strategy will be employed?

- Metallic aircraft SI strategy is based on slow defect growth under fatigue
- composites do not exhibit growth under fatigue so static strength requirements are used for composite aircraft – leading to a philosophy that 'no invisible defect can grow to failure'.
10:00 Welcome and Introduction to the Workshop.
10:15-10:45 Overview of potential for NDT of Automotive Composites.

Session 1 Motorsport, sports cars and super cars

11:25-11:45 Coffee break

Session 2 Regulation, insurance and repair

13:00-13:40 Lunch

Session 3 High-volume challenges

Session 4 Breakout session

16:00-16:40 Afternoon tea with sandwiches, etc.

Session 5 NDT Requirements Panel Session (ends 6 pm)