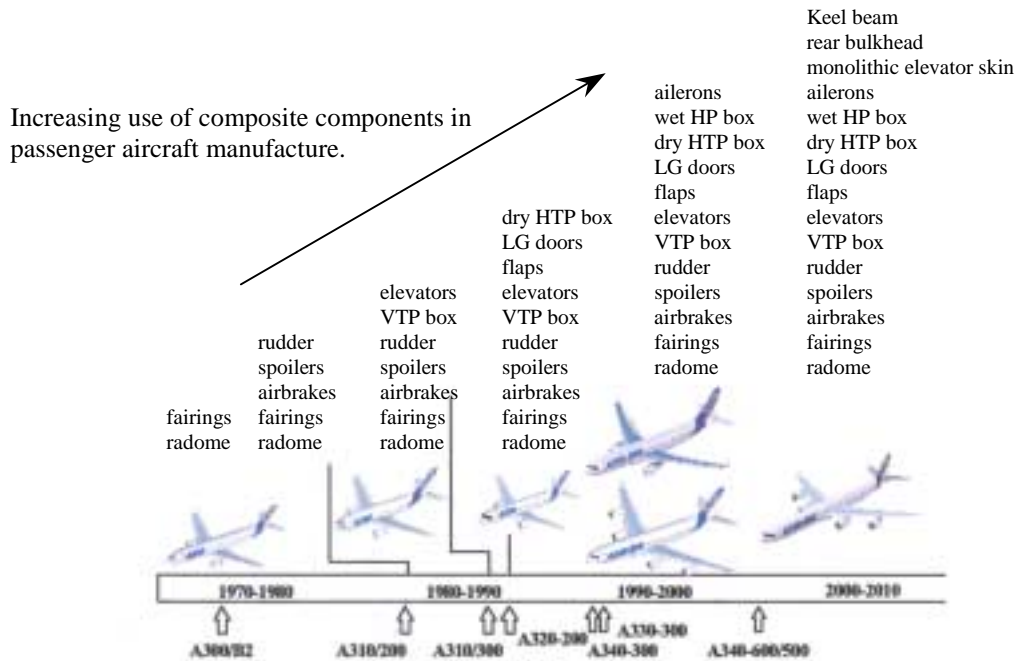


NANOSCAN: Development of New and Novel Inspection Systems for Composite Aircraft Non-Destructive Testing

The use of advanced composite materials in aircraft has drastically increased over the last 2 decades and is now including the production of safety critical parts (refer below figure showing the increase use of composites in passenger aircraft). Composites suffer from defects, which are considerably different from those found in traditional aerospace materials. Similarly Non-Destructive Testing (NDT) inspection techniques required to detect these defects will vary considerably from traditional methods.

The major hurdle in the development of NDT techniques specifically for composites is the inhomogeneous structure



of composites, which inhibits the use of NDT methods in their current form that rely on the material being homogeneous and a defect representing an inhomogeneous entity. A number of NDT techniques, that overcome the limitations of current NDT techniques, will be developed to inspect composites at the manufacturing stage and then in service as components of an assembled aircraft.

The consortium proposes to develop new and novel NDT techniques, sensors and systems for the inspection of advanced composites in aircraft. The novel NDT techniques developed will be based on ultrasonic, X-ray, thermography, resonance and laser shearography NDT methods. Hence the project will develop a suite of NDT sensors and techniques capable of delivering solutions to the total inspection requirements of the aerospace composite industry.

The consortium consists of world leading companies in different types of NDT technologies:

SME Partners

Ettemeyer, Germany
CIT, UK
RD Tech, France
Horton Levi, UK
NDT Consultants, UK
Sonatest, UK
Godfrey Hands, UK
Technitest, Spain
RTD Partners
KUT, Lithuania
Uppsala, Sweden
TWI, UK

Business

Optical and Vibration
 X-ray Inspection systems
 Eddy current and Ultrasound equipment
 Thermographic systems
 Aerospace NDT
 Ultrasonic NDT equipment
 Ultrasonic Resonance
 NDT services (Project Co-ordinator)
 Technological University
 University
 Research Institute, UK

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