

PINPOINT®

Automated Analysis and Sentencing of Image-Based NDE Data

Composite materials are widely used for structural aerospace components. Structural integrity is paramount, and is ensured by manual analysis of non-destructive image data. Operator-based analysis is time consuming, often subjective, and open to operator error. QinetiQ's PINPOINT software overcomes these deficiencies by providing automated analysis and sentencing.

PINPOINT

Responding to the inspection challenges of mass produced aerospace composite materials, QinetiQ has developed PINPOINT, providing automated analysis of image-based NDE (non-destructive evaluation) data. The software automatically analyses scans against written NDE specifications, identifying those containing anomalies. Anomalies are assessed against the configurable built-in acceptance criteria to provide the pass/fail output report required to certify the component as serviceable.

Rapid Analysis – See the Difference

Using customer data, QinetiQ can generate a 'reference scan', representing a scan of a perfect component. Production scans are assessed against the 'reference' allowing the operator to see only the differences in the production data. PINPOINT automatically detects and assesses the anomalies, with a potential reduction in operator workload of more than 90%.

Objective, Not Subjective

Defects detected by PINPOINT are automatically measured using a range of parameters such as length, width and area. Defect proximity rules are also built in, greatly reducing this time-consuming assessment stage. Because defects are

assessed against the acceptance criteria built into the software there is no subjectivity.

Track Part-to-Part Variation

In addition to defect detection, any other part variation from the 'reference' is flagged for further consideration. Variations in feature position, such as stringers and drilled holes, are instantly apparent, as are variations in dimensional tolerances, such as component thickness.

Meets Requirements of Leading OEMs

Defect detection rules and acceptance criteria rules are highly configurable to meet OEM inspection requirements. PINPOINT supports 'zones' allowing

PINPOINT provides:

- Rapid analysis of NDE data
- Comprehensive and versatile acceptance criteria
- Consistent and objective application of detection and assessment rules
- Tracking of part-to-part variation

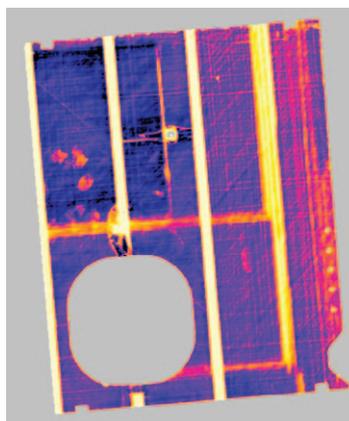
different detection and assessment criteria to apply to specific component regions.

Transferable Operatives

PINPOINT is compatible with many file-formats and all defect detection and assessment rules are built-in. Inspectors no longer need training on individual NDE analysis systems and customer-specific analysis requirements.

Modality Independent

Although developed for ultrasonic inspection data, PINPOINT is equally suited to any imaged based NDE data, such as X-ray, and low-frequency vibration.



Left: Ultrasonic amplitude scan of a defective component. Right: The same scan data after being compared with a 'reference scan' in PINPOINT revealing locations of potential defects (red areas).

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