



New Technology Alternative to UT Grid Mapping.

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Denver, Colorado.*

Presented By
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*We make flying
safer!*



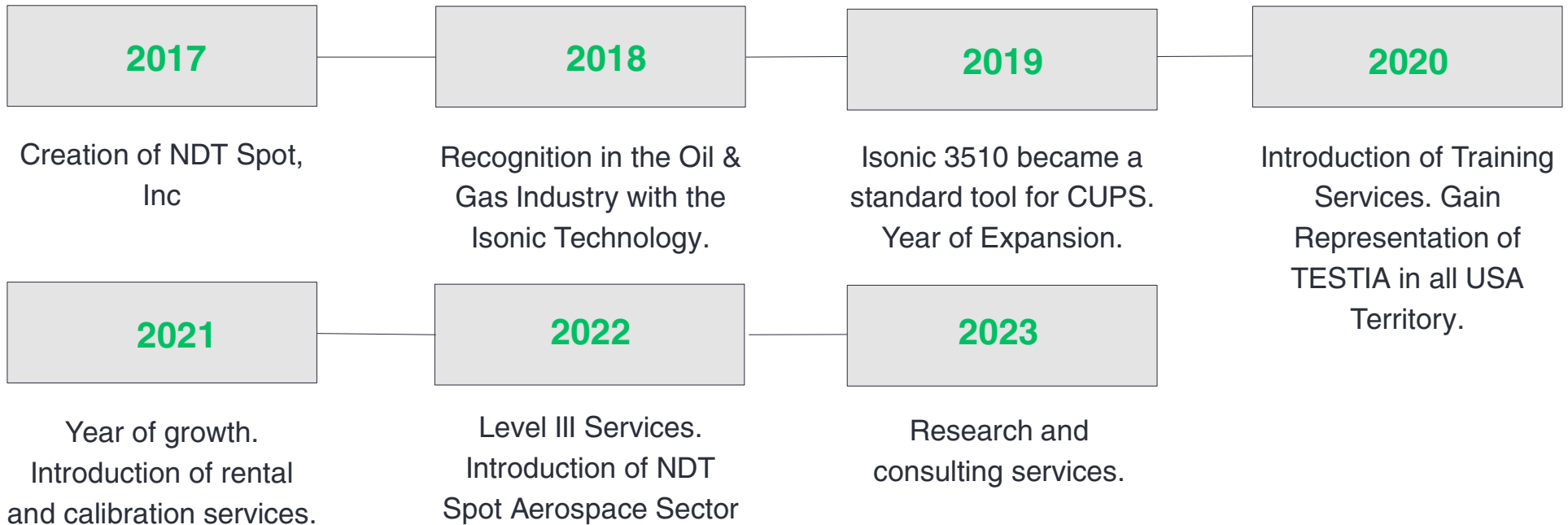
About the Company

NDT Spot, Inc. Is a Texas based company that offers integral inspection solutions that improve the reliability and efficiency of the complex and challenging NDT applications in the industry.





Our Milestones





Position in the industry

We offer NDT Packages (Technology, Procedure, Training), based on the features of our technology, to assets owner and advanced services inspection companies needing solutions that are more reliable, efficient, and less dependent on the technician for the complex and challenging application of the Aerospace Industry.





Bringing to our customers

- Realistically and reliably inspection methods of very complex applications.
- Less time for the implementation of the inspection process.
- Reduction of the time analysis.
- Increasing the profitability of their operations reducing the time of inspection and analysis and adding capabilities to their portfolio.





Our Offered Services

- Training and Qualification of NDT Personal.
- Inspection Procedures Elaboration.
- Equipment Rental.
- Ultrasonics equipment Repair and Certification of Ultrasound.
- Consulting.
- Distribution of NDT Equipment.





NDT Spot is the distributor for USA of:





What Technologies do we offer for Aerospace with TESTIA?



Thickness Tool

Divide inspection time by 20 after blended out corrosion



Smart UE1

Aero specialized Ultrasonic and Eddy Current Connected Tools, with all-in-one features to ease inspections and decision making.



D-Lam Tool

Detecting delamination's after impact on multi-layered components on composite materials



Clad Tool

To detect the lack of cladding in metallic parts



Why are we here today?

To show how new inspection technologies can reduce cost of operation and increase efficiency on aircraft inspection when it comes to UT Grid Mapping.





UT Grid Mapping

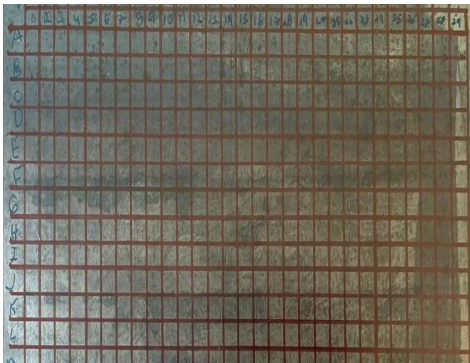
- Thickness measurement over the aircraft body is a key process to assure the functional condition of the structure.
- The Drawing of a grid on the skin of the aircraft is usually required in order to create the area of inspection for the report.
- This inspection is required on grids that can have + 500 points depending on the extension of the area of concern. Considering cells of 10 mm x 10 mm, an area of 250 mm x 250 mm contains 625 cells, while an area of 1000 mm x 1000 mm contains 10000 cells.
- The minimum remaining wall of each cell is required.



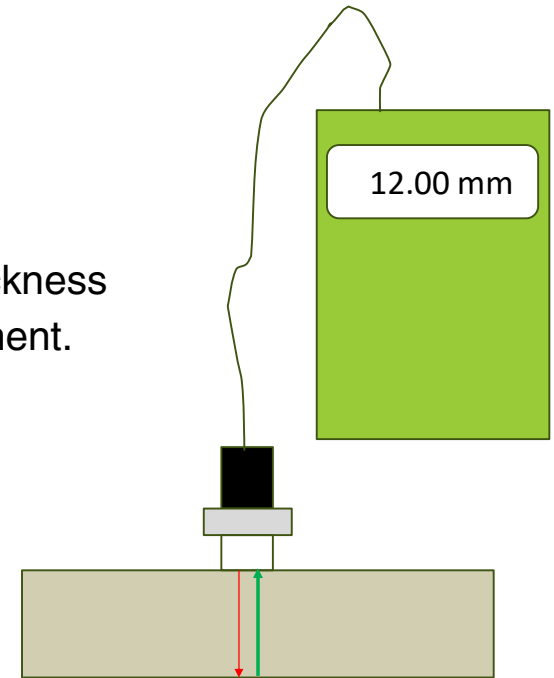
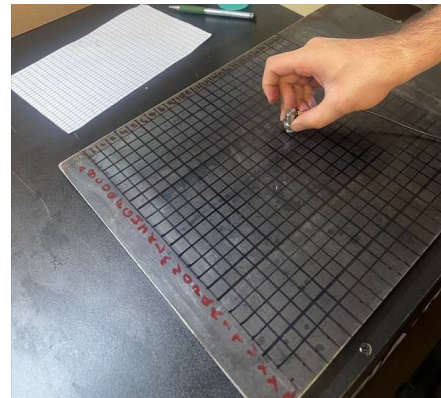
How is this inspection performed today?

Conventional UT thickness measurement.

1. Drawing of a Grid.



2. UT Thickness measurement.

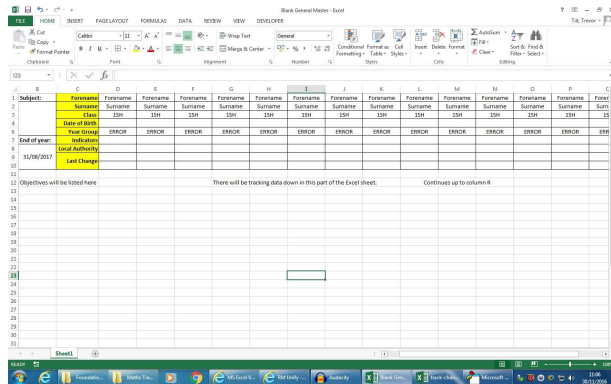




How is this inspection performed today?

Conventional UT thickness measurement.

3. Transcribe the reading to a spreadsheet.



4. Write the report.





So, what is the Issue with this method?

Conventional Thickness Measurement demands:

- Drawing of a Grid: Time consuming 30 min.
- Inspectors time: usually performed by two technicians, one taking measurements and the other writing it down on a piece of paper to be later type on an Excel grid on the computer.
- The Probe is smaller than each cell, consequently, it takes time to find the minimum remaining wall in each cell.
- It takes about 1 minute to obtain 3 measurements if you are doing it correctly. Measurements total Time: 3 - 4 uninterrupted Hours for 552 cells Grid.
- Data Processing and reporting time can take days, weeks. Depending on the work volume, in other words the area that you are going to inspect and the quantity of points.

TOTAL Man-Hour to inspect:

6 ½ – 8 ½ M-H

Answer: TIME and productivity

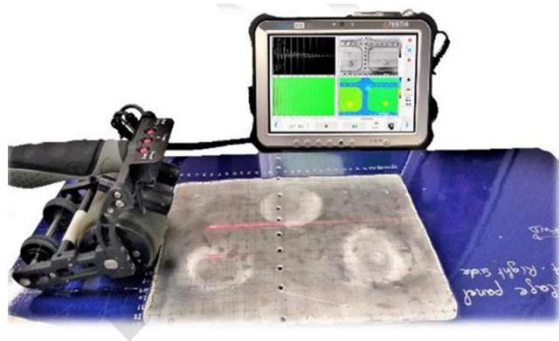


What is the solution that TESTIA is offering?

A Phased Array UT (PAUT) Inspection Kit: ThicknessTool

comprised of:

- 32-Channel PAUT unit.
- 32-element roller probe (44 mm wide)
- Acquisition and automatic analysis software Excel/Word matrix report generator.



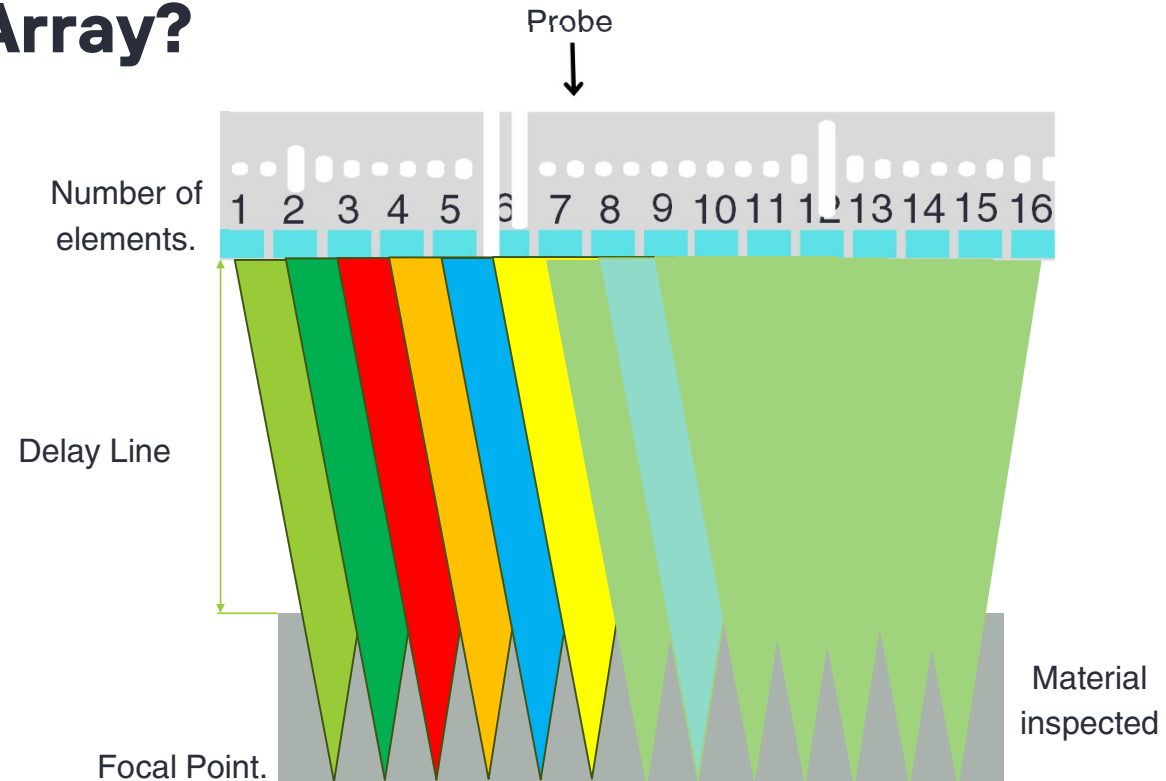
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
A	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
B	2.53	2.47	2.53	2.53	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47
C	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47
D	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41
E	3.45	3.45	3.57	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45
F	2.4	2.34	2.34	2.34	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
G	2.4	2.34	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
H	2.4	2.34	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
I	2.4	2.34	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
J	2.4	2.34	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
K	2.4	2.34	2.4	2.4	2.34	2.4	2.4	2.4	2.4	2.34	2.34	2.34	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
L	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
M	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
N	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
O	2.34	2.34	2.4	2.4	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34
P	2.4	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34
Q	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34
R	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34
S	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34
T	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34
U	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53
V	3.45	3.45	x	3.45	3.57	3.57	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45	3.45

Created and Approved by Airbus
 Referenced in NTM procedure NTM 51-10-04B Airbus A320.

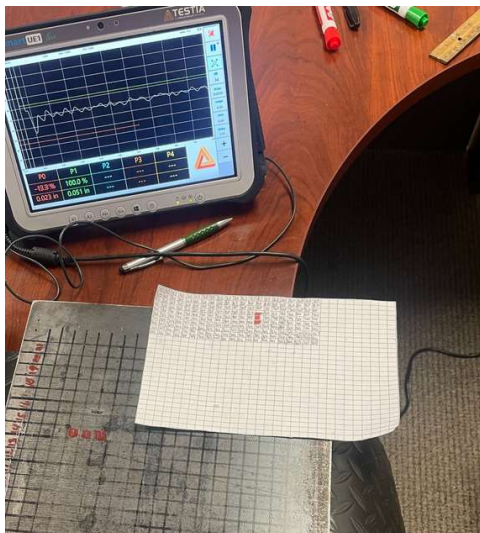


What is a Linear Scanning Phased Array?

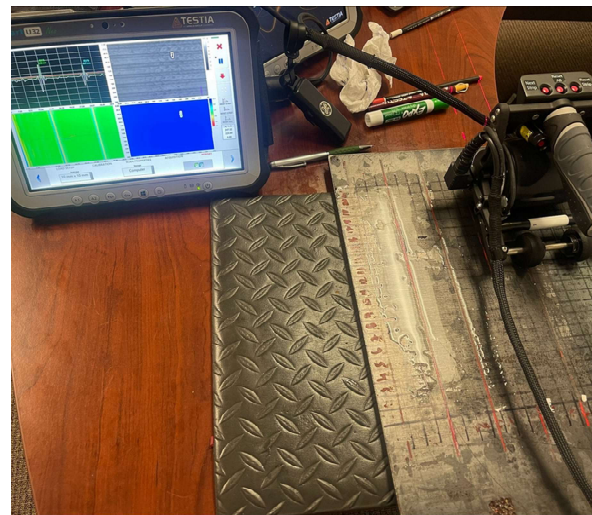
ThicknessTool creates a PAUT linear scanning which means the implementation of the same focal Law in different groups of elements covering a volume of the piece with beams that have an angle of 0° and a specific focal distance but moving the beam along the axis of the element array. The electronic activation of each group of elements replaces the mechanical movement that is required with a conventional probe, this is why Linear Scanning is also called Electronic Scanning. This scanning improves the speed of inspection considerably.



Example: UT Grid Mapping VS ThicknessTool



An Area of 260x260mm on a 10 mm grid takes an approximate of about 4 hours. (not considering the creation of the report)



With the ThicknessTool it takes an approximate of 30 minutes.(considering the automatic report)



Comparison TT Vs Conventional UT for a 552 cells Grid

Conventional Thickness Measurement demands:

- Drawing of a Grid. Time consuming 30 min.
- Inspection time: usually performed by two technicians, one taking measurements and the other writing it down on a piece of paper to be about 1 minute to obtain 3 measurements if you are doing it correctly. Measurements total Time: 3 - 4 uninterrupted
- Excel Matrix creation, Data Processing and reporting time: 2 days.

**TOTAL Man-Hour to inspect:
24 ½ M-H**

Thickness Tool:

- Drawing of a Grid. No needed.
- Inspection time: usually performed by one technicians, Measurements total Time: 30 min, with no interruption.
- Data Process and reporting time: 2-3 Hour.

**TOTAL Man-Hour to inspect:
4 M-H**

6 TIMES FASTER!



Advantages

- Reduction on time.
- NDT inspector can focus on more important activities than spending days or months taking measurements.
- Reduction of downtime for the aircraft.
- Process optimization.
- Increases the reliability of the inspection





Any questions?



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