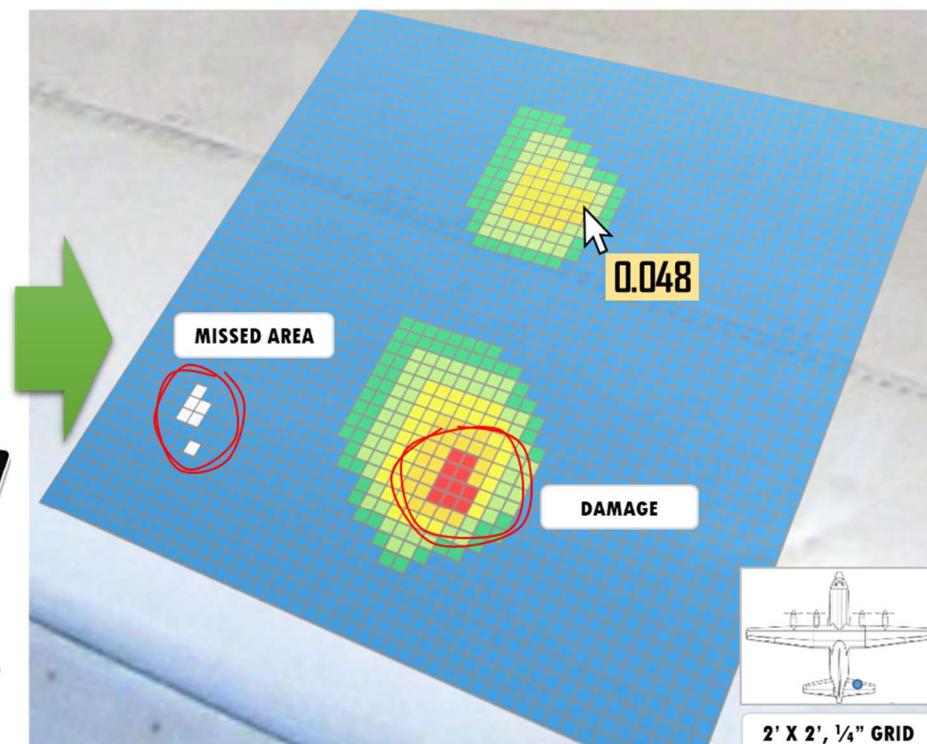


TRACKER

Mobile C-Scan Generation



NDT Tracker Tool for Accelerating Grid Inspections: Updates from the Field

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Principal Investigator
Cybernet Systems Corporation

September 18, 2024

Nashville, TN

NDT Tracker for Grid Inspections

- Frame area with 3 or 4 markers
- Camera tracks location of probe
- Tablet displays and records grid readings from inspection device

As long as camera can see the target you're good!

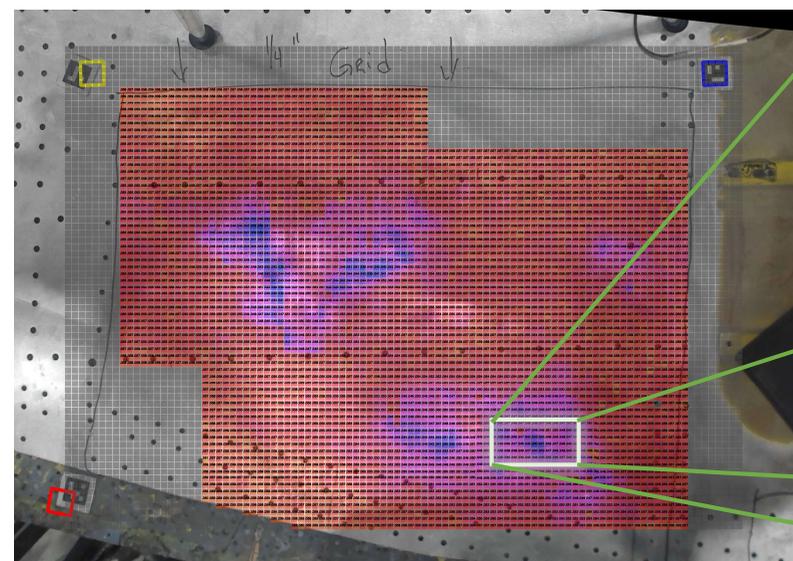
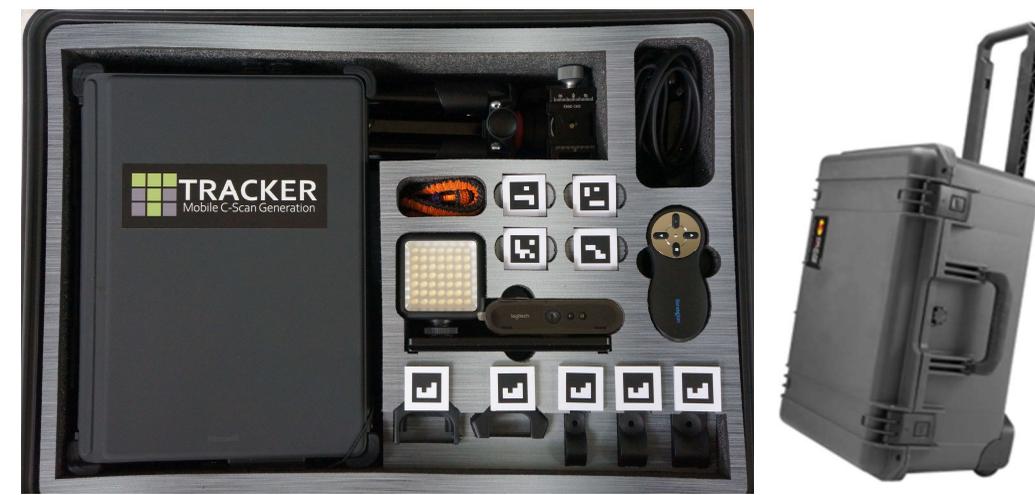


1/4" Grid UT Scan by Tinker AFB

Developed by Cybernet and U.S. Air Force, cutting grid inspection labor by 2-1

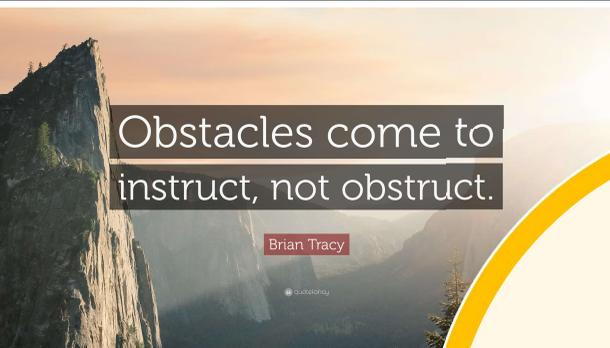
Accelerating UT Grid Inspections

- Eliminates hand-drawn recording of grids
- BYOD: Bring Your Own Device
- Rapid 5-10 min setup, intuitive interface
- Smooth tracking 30 fps, PDF & CSV reports



.050	.045	.045	.047	.048	.047	.049	.048	.047	.049	.049	.047	.047	.047	.047
.049	.044	.044	.045	.048	.055	.047	.046	.049	.051	.050	.048	.046	.045	.047
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.049	.048	.046	.049	.047	.046	.045	.040	.041	.046	.047	.048	.049	.048	.049
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Obstacles Overcome: Technical



Miniaturize

3D localization technology originally invented for large area inspection of NASA rockets

- Purpose-built NDT Tracker for 1-5ft range and up to 4x4ft inspection areas

Dummy-Proof

Be lightweight and rapidly deployable by high school graduate level personnel

- Top Air Force requirement
- Setup in 5-10 mins from a 28 lbs. rolling case

Don't Lose Feel

Balance inspection speed, accuracy, precision, and feedback for inspectors

- Inspectors trust and reach for the Tracker
- Look at tablet display more than their hands for feedback and progress

Obstacles Overcome: Non-Technical

The best method of overcoming obstacles is the team method.

Colin Powell

@colinstanley

New Home

Targeting the right application for technology

- Introduced to NDI team at Tinker AFB
- Identified ¼" grids as major pain-point and pivoted to current Tracker

New Tool

Earning buy-in from inspectors and managers

- Spent weeks alongside inspectors, understanding good, bad, and ugly of grid inspections
- Listened to all feedback, made changes until all concerns were addressed

Valley of Death

Federal funding to commercialization

- Invested internal R&D to secure AF support and win sequential funding through SBIR CRP program
- Users: Tinker & Robins AFB, NASA Armstrong, Antelope Valley College, ST Engineering, soon Delta TechOps



Accelerated Inspections at Tinker

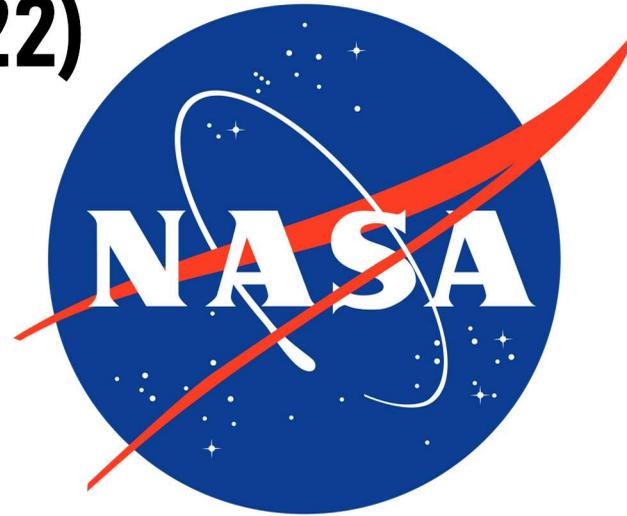


Tinker Air Force Base (since 2019)

Remaining thickness after blending, looking for corrosion, other scenarios

- 50% reduction in grid inspection labor
- Faster inspection process, and no more rework
- **“Definitely got ROI”** by moving jets out faster
- **“Engineering loves the clear up-front results. The overlaid picture of the part does seem to save back and forth between the structures engineers and the NDI team.”**
- **NEW:** Ordering third unit to meet increased grid inspection workload

Field Report from NASA Armstrong



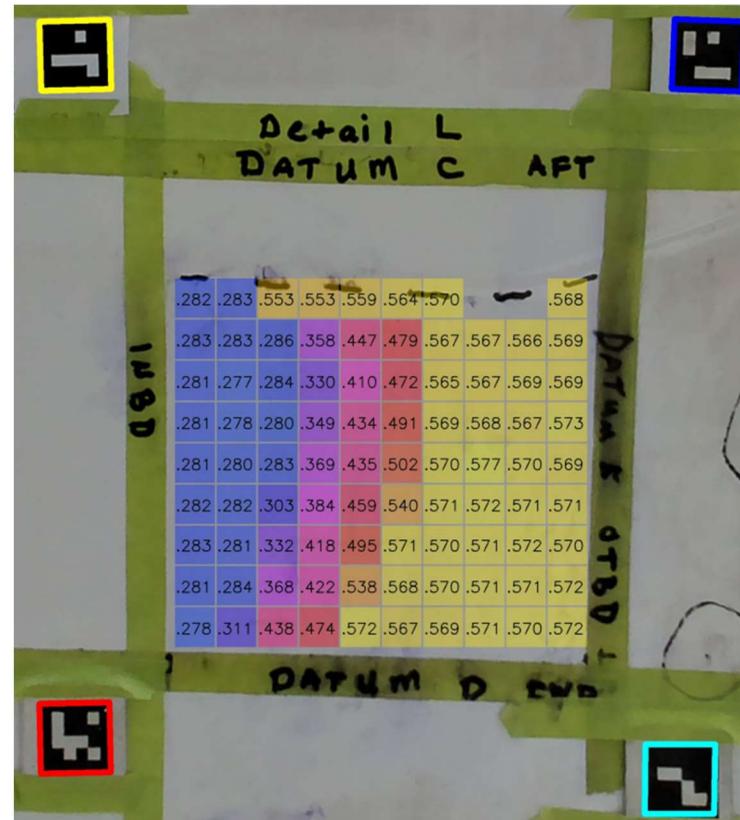
NASA Armstrong Flight Research Center (since 2022)

Mapping thicknesses around windows where there's corrosion damage, mapping defects in wing attach points

One recent example:

“It was used to map out an area that we noted at values less than what was listed as nominal.

The structural engineers use this data to determine if we can continue using the aircraft.”



NDT Tracker Tool for Accelerating Grid Inspections:
Updates from the Field

Advanced Interfaces for Robins

Robins Air Force Base (since 2023)

Mapping disbands and delamination of honeycomb wing and body skin composites and C-5 cargo floor panels

- Bondmaster 600 integration
- Pitch-catch probe attachments
- Universal attachments for most cylindrical probes
- HoloLens integration with plans to replace camera and tablet

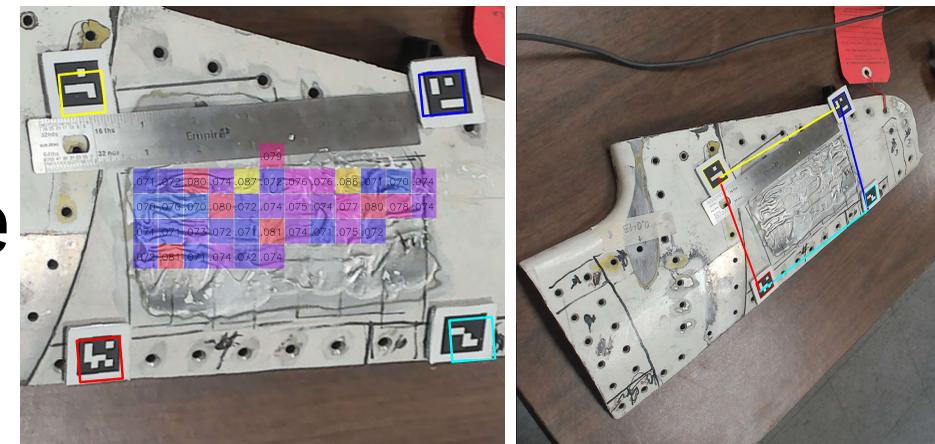
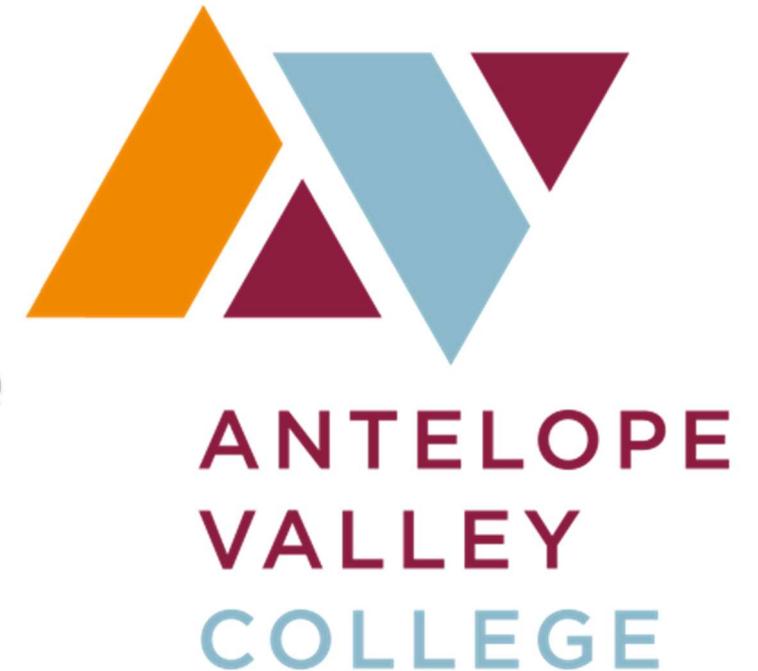


Accelerated NDT Training at AVC

Antelope Valley College (since 2024)

ANDI 120 Introduction to Ultrasonics, providing a visual aide to learn UT scanning and let students practice with it

- “I plan on using this next semester to demonstrate thickness testing and mapping damage.”
- Counts towards NS410 Level 2 Certification
- 10-15 students at a time practicing with it
- Looking at creating “virtual flaws” to save time creating flawed specimens



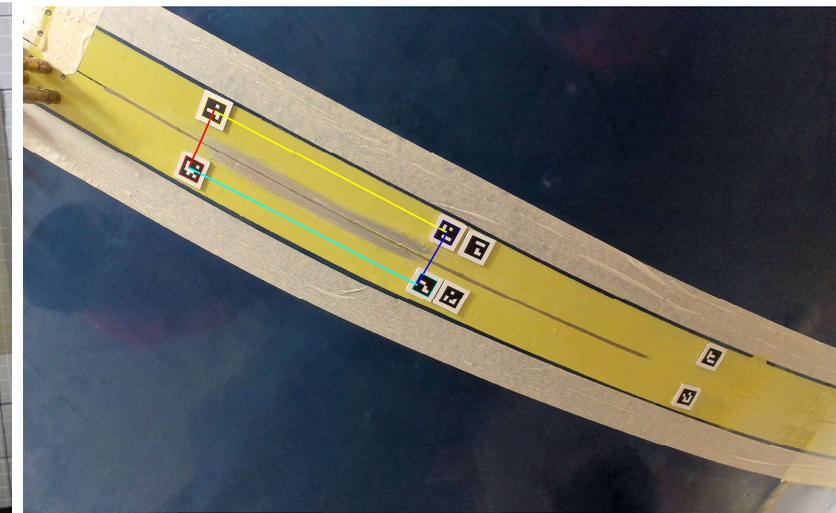
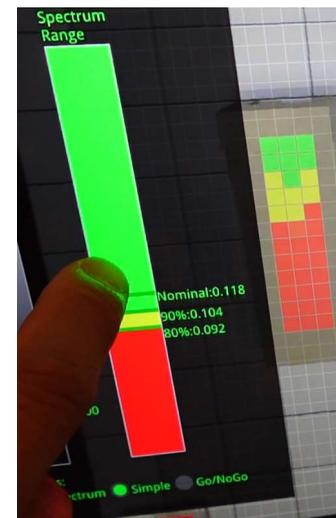
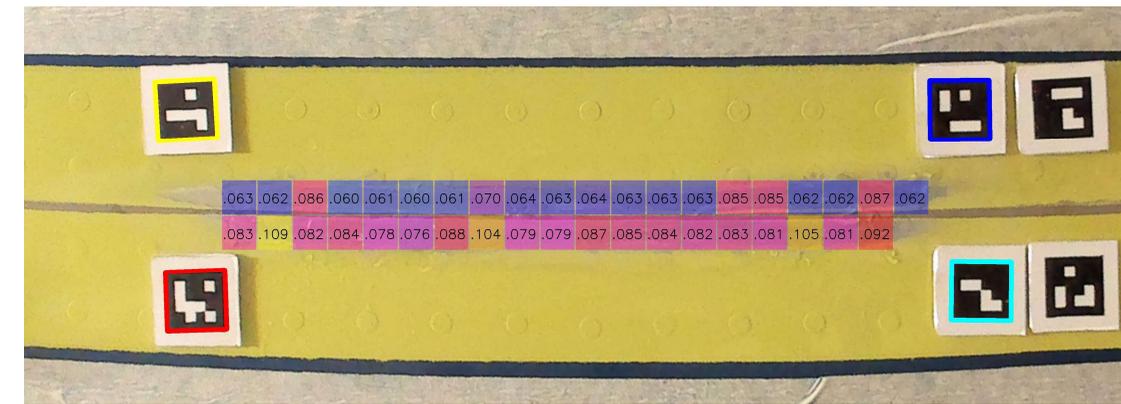
First MRO User at ST Engineering

ST Engineering VT-SAA (since 2024)

Fuselage skin inspections, urgent need with 20 planes
 “waiting nose-to-tail” to get these inspections



- **“How soon can we get the tool?”**
- Estimated speed-up: 2 hrs to 15 mins
- New Features:
 - Camera Verification Check Report
 - Configurable colors for % deviation
 - New attachment: Sonopen spring-loaded holder
 - “Smart assist” grid cell recording



Learn More at tracker.cybernet.com

- Latest Specs, Video Demos, FAQs, Example Reports
 - **Come see a live Tracker demo today at our Booth in Parthenon D&E!**
 - We have spent the last decade delivering state of the art NDT tracking and mapping solutions. We will partner with you to meet your requirements!
- »» **To schedule an onsite Tracker demo, reach out to:**
tracker@cybernet.com

