

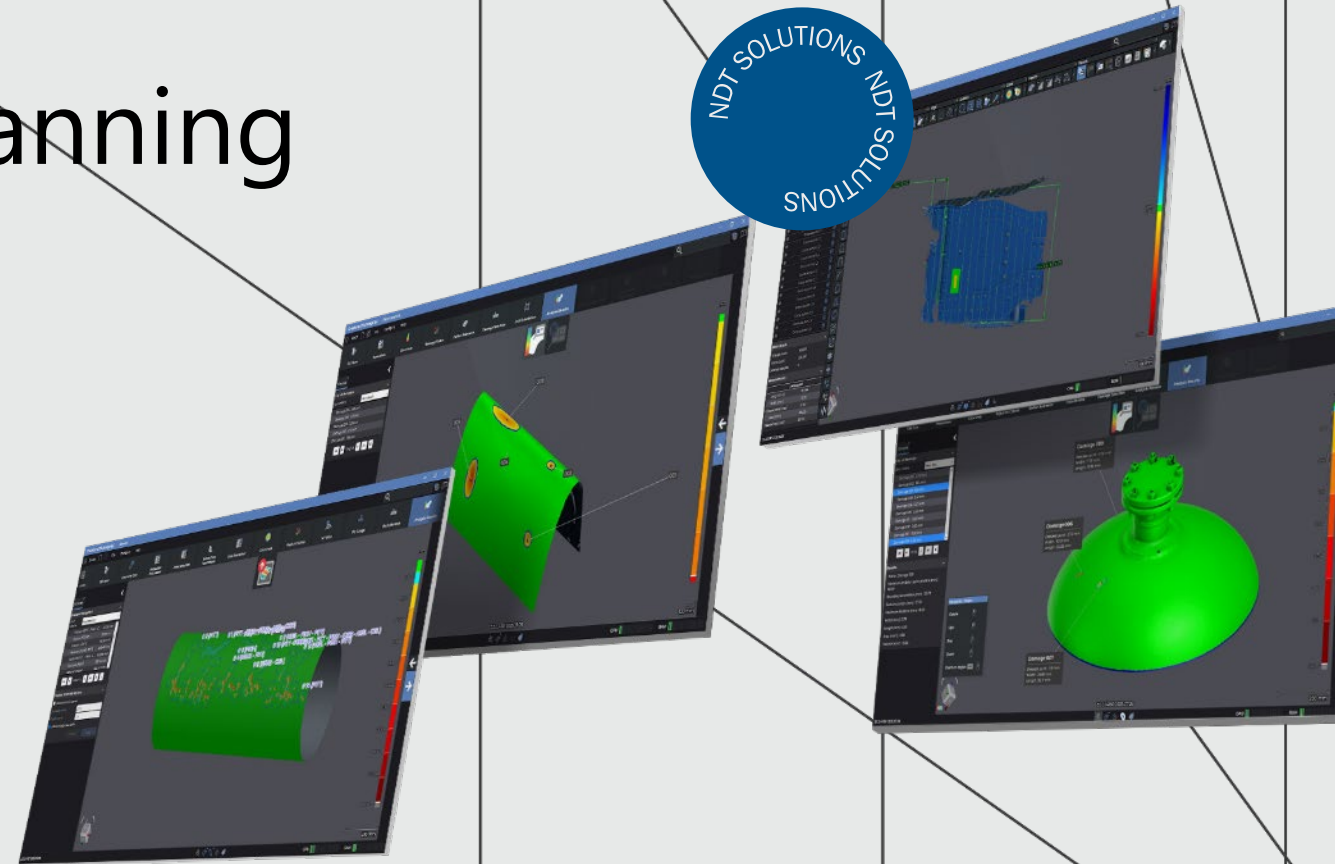
INNOVATION
TAKES FORM

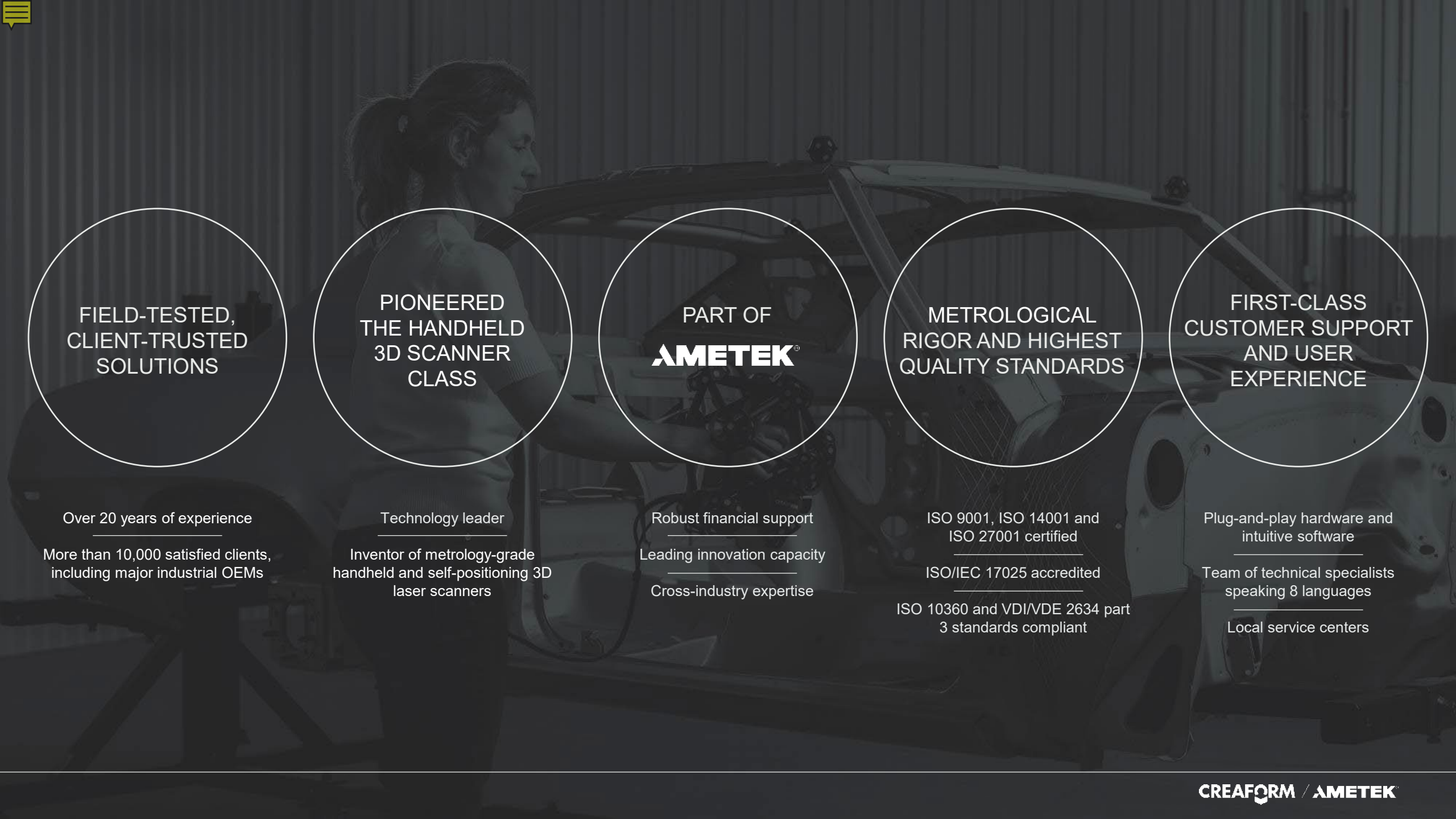


Enhancements in 3D Scanning for Aircraft Inspection

A4A NDT FORUM
September 21-23, 2026

CREAFORM / **AMETEK**





FIELD-TESTED,
CLIENT-TRUSTED
SOLUTIONS

PIONEERED
THE HANDHELD
3D SCANNER
CLASS

PART OF
AMETEK

METROLOGICAL
RIGOR AND HIGHEST
QUALITY STANDARDS

FIRST-CLASS
CUSTOMER SUPPORT
AND USER
EXPERIENCE

Over 20 years of experience

More than 10,000 satisfied clients,
including major industrial OEMs

Technology leader

Inventor of metrology-grade
handheld and self-positioning 3D
laser scanners

Robust financial support

Leading innovation capacity

Cross-industry expertise

ISO 9001, ISO 14001 and
ISO 27001 certified

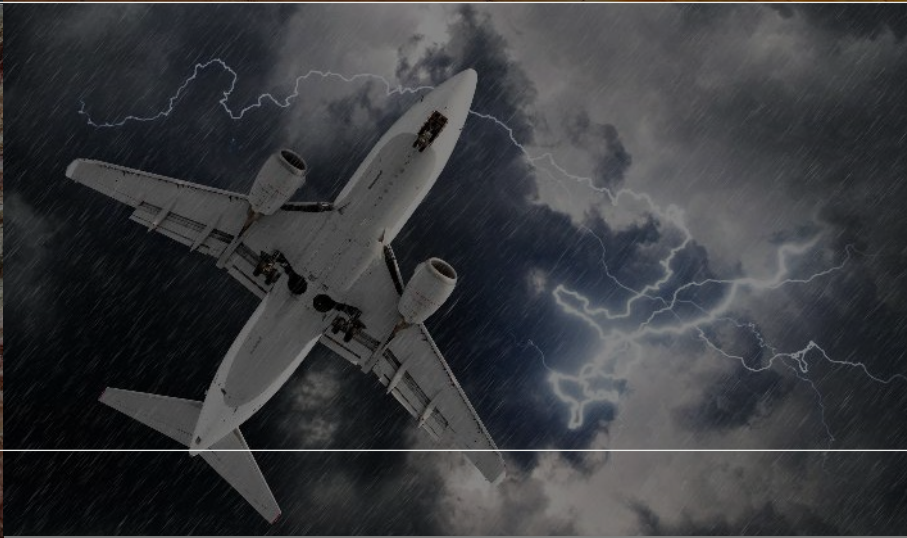
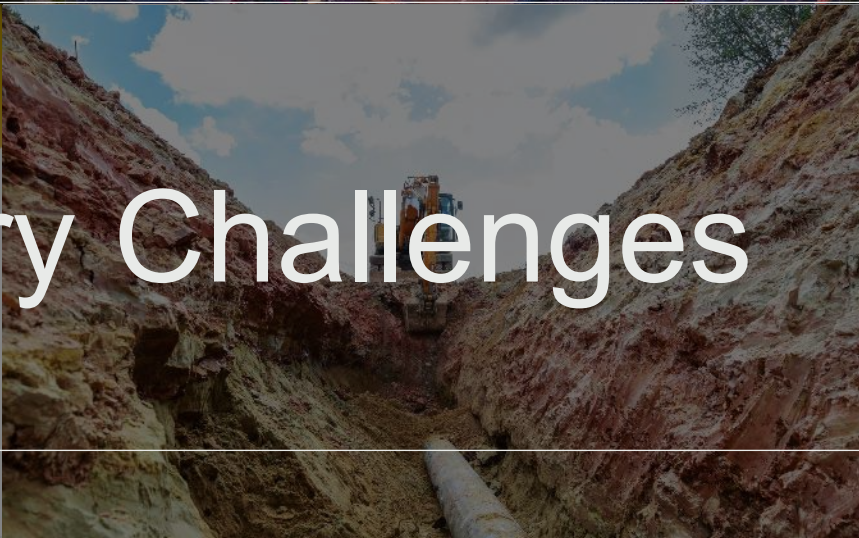
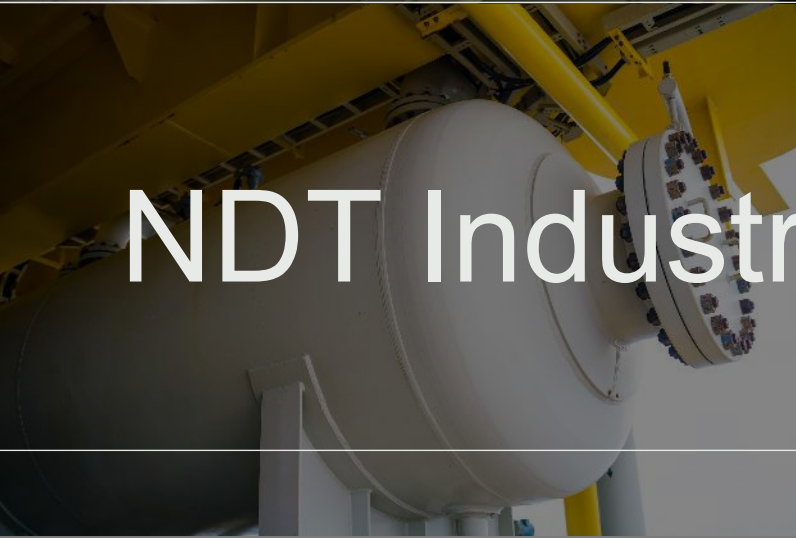
ISO/IEC 17025 accredited

ISO 10360 and VDI/VDE 2634 part
3 standards compliant

Plug-and-play hardware and
intuitive software

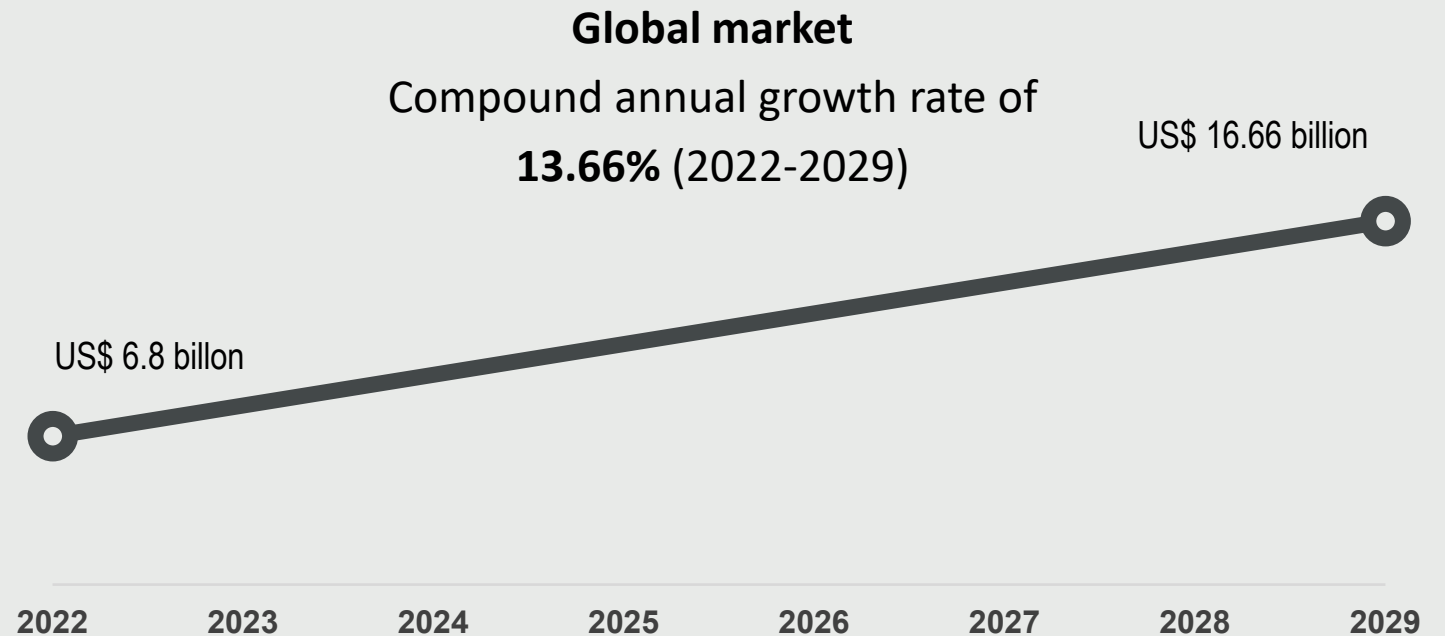
Team of technical specialists
speaking 8 languages

Local service centers



NDT Industry Challenges

Non-Destructive Testing Market Trends and Forecasts



***Fortune Business Insights Non-Destructive-Testing (NDT) Market Study - 2025*



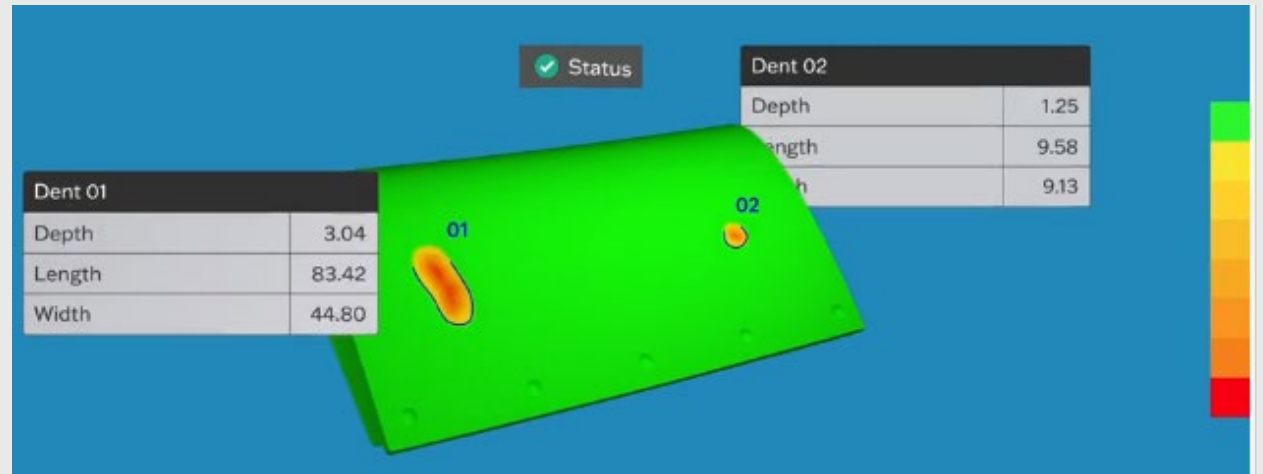
The average NDT technician is 51 years of age.

Since 2018, the NDT technician unemployment rate is below 3%.



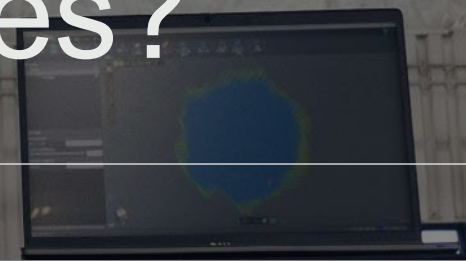
12% of the workforce is below 30.

How Do 3D Scanners Work?





How 3D Scanners Help You Overcome These Challenges?





3D Scanning Benefits



USER-INDEPENDENCE

Repeatable results, regardless of the user's level of expertise



ACCURACY

Up to 0.020 mm or (0.0008 in)



TRACEABILITY

Keep a digital twin of your inspection



SIMPLICITY

Short learning curve and easy to use



PRODUCTIVITY

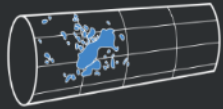
80x faster than the pit gauge technique

Complete 3D Software Solution

Pipeline

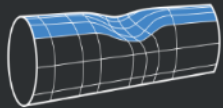
Applications

Corrosion



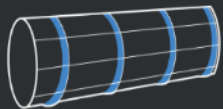
For corroded pipelines

Dent



For dented pipelines

Wrinkle



For wrinkled pipelines

B31.G
B31.8R

Aircraft

Applications

Dent on single curvature



For cylindrical sections of the fuselage, flaps, wings and more

Dent on multiple curvature



For cockpit, engines and more

Pressure Equipment

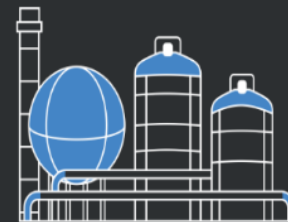
Applications

Damage on single curvature



For cylindrical shells, flat surfaces, straight pipes and more

Damage on multiple curvature



For elbow pipes, pressure vessel heads, spherical shells and more

API-579
(FFS)

Analysis Toolkit

Import mesh

File name

analyse elbow.VXi

analyse elbow.VXi

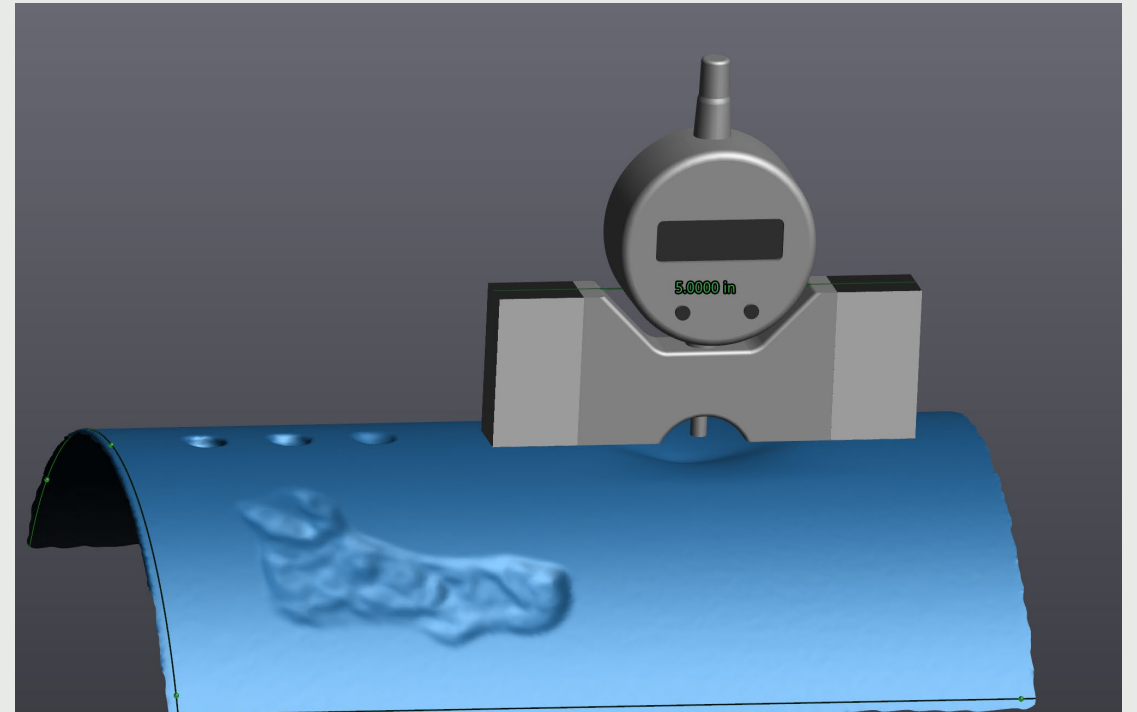
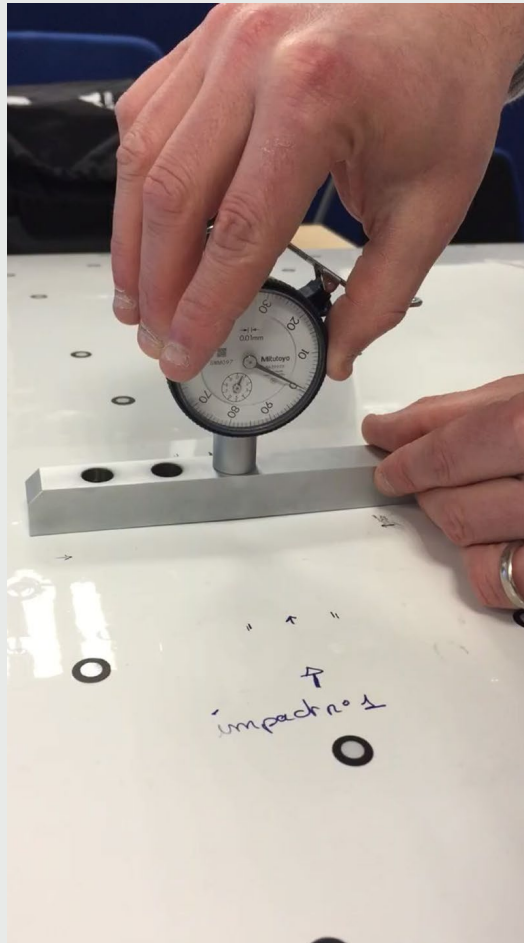
C:\Users\flachance\OneDrive - AMETEK Inc\Desktop
\Data Based\analyse elbow.VXi



Which Applications Can Be Solved Using 3D Scanning Solutions?



SOFTWARE IS DESIGNED TO EMULATE TRADITIONAL METHODS



Digital Pit Gauge

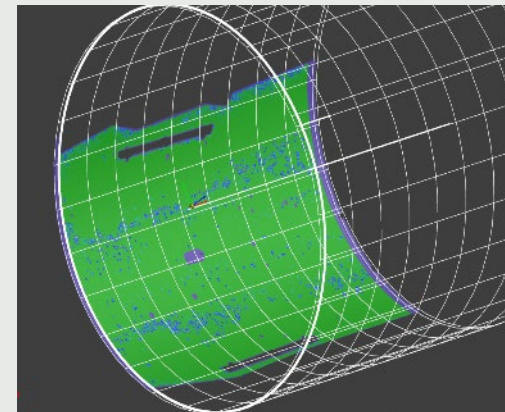
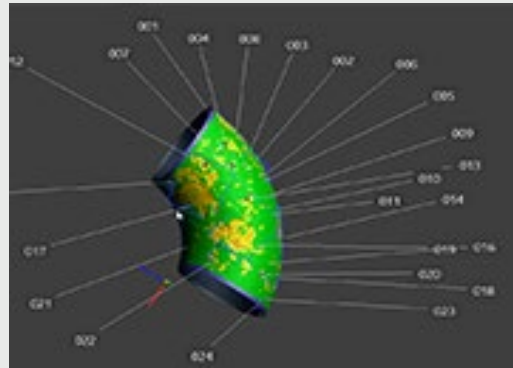
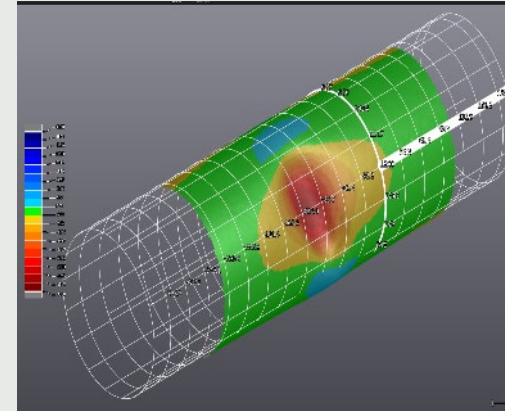
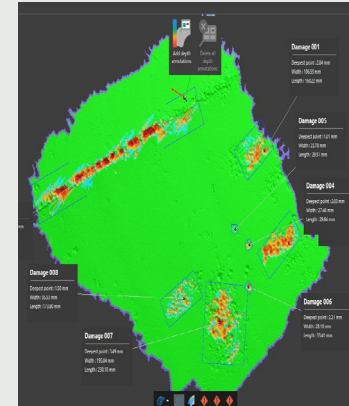
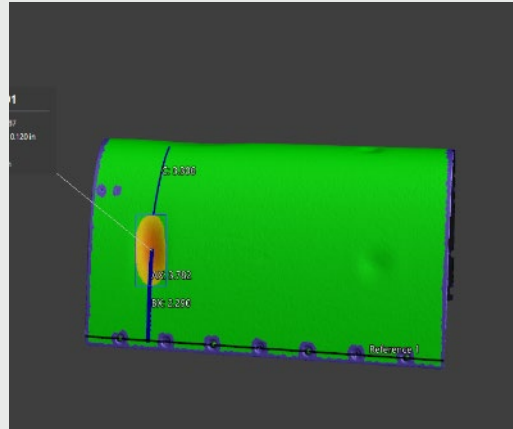
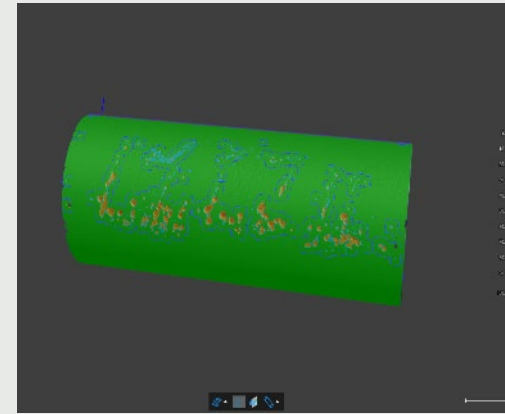
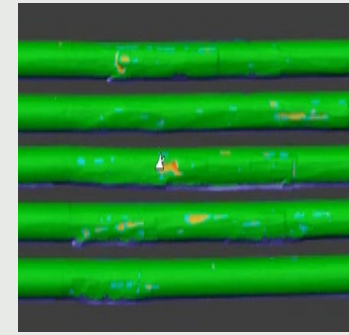
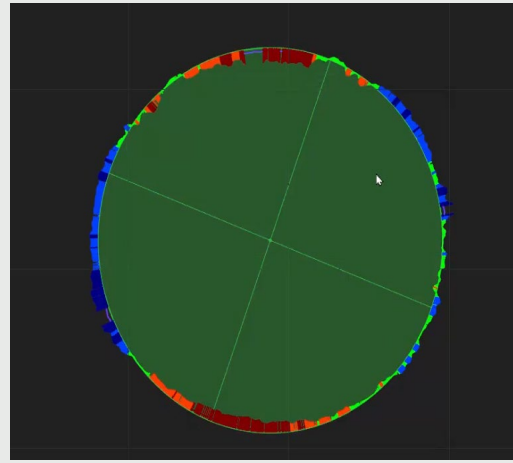
Applications

Aircraft (Fixed Wing and Rotorcraft)

- Dent on aircraft
- Hailstorm
- Bird Impact
- Buldge on aircraft
- Corrosion

Analysis Toolkit

- Ovality
- Bending
- Corrosion monitoring
- Retro-fit application
- Other advance damage or dimensional assesments



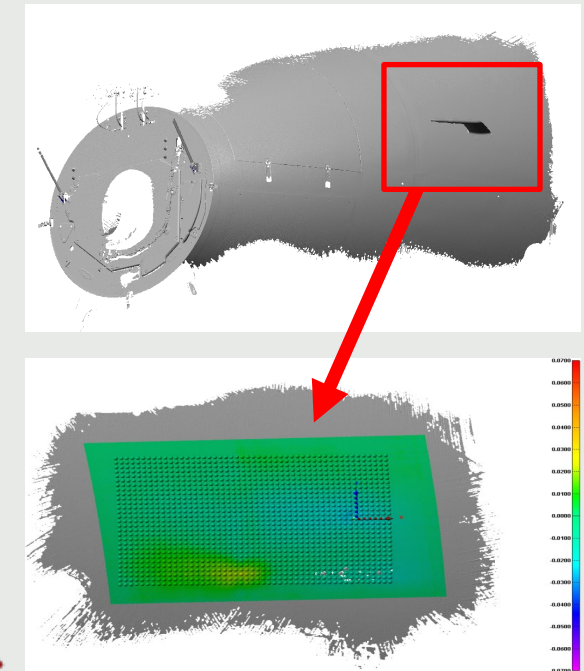
RVSM Capabilities

Challenges

- Pitot static certification requires damage assessment in the area
- Manual inspection is time consuming and not repeatable.
- Manual inspection resolution a minimal one-inch grid
- User dependent result, straight edge changes reference on each horizontal position

HandySCAN

- Position target or soft jig around area
- Scan and perform analysis on-site or scan to OEM
- Scan is actual representation of the surface.
- Point selection can be programmed in 3D software depending on plane type/OEM



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1		400	380	360	340	320	300	280	260	240	220	200	180	160	140
2	200	-0.03626	-0.03409	0.014252	0.061834	0.100085	0.190612	0.124246	0.106275	0.089183	0.070544	0.061995	0.048759	0.030667	-0.0075
3	180	0.023021	-0.00043	0.030937	0.115015	0.184675	0.225387	0.181192	0.117332	0.115874	0.112285	0.100142	0.089176	0.044601	0.029158
4	160	0.03731	-0.02008	-0.01233	0.060219	0.161509	0.212266	0.176125	0.146756	0.110907	0.089693	0.076214	0.077289	0.040339	0.003193
5	140	-0.06981	-0.04467	-0.01051	0.012971	0.139248	0.203096	0.142372	0.113395	0.080247	0.050685	0.043334	0.017697	0.000562	-0.02094
6	120	-0.06055	-0.0756	-0.11076	0.02412	0.094205	0.19066	0.0896	0.063873	0.029096	0.00591	-0.04041	-0.02646	-0.0547	-0.06472
7	100	-0.07963	-0.07999	-0.06074	0.02006	0.044991	0.08731	0.011308	-0.03071	-0.07293	-0.09684	-0.08876	-0.10736	-0.10805	-0.12597
8	80	-0.09019	-0.06236	-0.02276	0.000581	0.002543	0.004367	-0.04321	-0.10986	-0.15037	-0.17952	-0.18768	-0.1943	-0.21796	-0.21607
9	60	-0.07797	-0.02734	-0.00489	-0.02051	-0.01813	-0.01345	-0.10962	-0.18233	-0.21271	-0.25284	-0.26991	-0.26333	-0.2611	-0.28384
10	40	-0.12958	-0.09401	-0.05761	-0.00055	-0.0771	-0.06117	-0.16155	-0.23649	-0.25755	-0.29491	-0.3064	-0.3021	-0.31258	-0.34444
11	20	-0.118	-0.11176	-0.11054	-0.11009	-0.07294	-0.06099	-0.17424	-0.22051	-0.23735	-0.2763	-0.28928	-0.29448	-0.34626	-0.38108
12	0	-0.17901	-0.18018	-0.16157	-0.13283	-0.04945	-0.05551	-0.1395	-0.19726	-0.25159	-0.28279	-0.27917	-0.29495	-0.35331	-0.36611
13	-20	-0.14057	-0.17926	-0.16763	-0.11453	-0.02615	-0.01454	-0.12206	-0.18363	-0.22137	-0.19772	-0.25146	-0.25591	-0.30508	0
14	-40	-0.14811	-0.1652	-0.14538	-0.11601	0.021805	-0.0089	-0.09602	-0.14947	-0.19355	-0.21181	-0.21082	-0.19644	-0.22586	0
15	-60	-0.08091	-0.12683	-0.13952	-0.09325	-0.02422	0.0031	-0.03838	-0.10501	-0.14053	-0.15222	-0.15796	-0.12704	-0.13357	0
16	-80	-0.01832	-0.04946	-0.05037	-0.11482	0.00791	0.066438	0.080524	-0.04449	-0.08419	-0.08794	-0.07995	-0.10136	-0.09022	0
17	-100	0.080745	0.062409	-0.00012	-0.09344	-0.00054	0.119705	0.097358	0.017798	0.012952	-0.09621	-0.03418	-0.02824	-0.02032	0
18	-120	0.225092	0.209125	0.189134	0.10799	0.178218	0.343325	0.177664	0.072504	0.076022	0.049499	0.012214	0.025922	0.00668	-0.04352
19	-140	0.333891	0.361757	0.389899	0.389919	0.427318	0.381067	0.299949	0.178679	0.1189	0.059648	0.026997	0.008051	-0.00944	-0.04309
20	-160	0.370109	0.43014	0.497294	0.570318	0.518518	0.464611	0.306262	0.163363	0.090367	0.041922	0.002248	0.081275	0.07005	-0.15495
21	-180	0.318784	0.36836	0.462039	0.396405	0.393084	0.344729	0.227908	0.120094	0.046269	-0.0052	-0.03143	-0.03464	-0.0882	-0.1314
22	-200	0.210945	0.236946	0.248776	0.218911	0.172989	0.159492	0.117558	0.079051	0.037294	0.021598	-0.04496	-0.04899	-0.06429	-0.10531



Creaform Integrity Suite & NEW! - HandySCAN 3D|EVO Series



HandySCAN 3D|EVO Series for Maintenance Applications



Portability

Real-time visualization
Touchscreen navigation
Remote connection



Process Integration

Pre-configured inspections
Streamlined interface
Automatic report generation



Documentation

Photographs of the inspected parts
Color Map projection on photographs
Live-feed mesh overlay



Portability

1

Near Autonomous Scanner

Deploy anywhere and in the harshest environments

Benefits

- Eliminates trips between the computer and the inspection area
- Easier access to confined or hard-to-reach areas
- Keeps the computer away from harsh industrial environments
- More ergonomic data visualization





Integrated Workflow

2

Guided Inspection – A Simplified Interface

Your 3D scanner becomes the procedure

Benefits

- Minimizes the likelihood of operational mistakes
- Reduces training and expertise requirements for operating the instrument
- Reduces latency between inspection and report generation
- Boosts productivity across all stages of the workflow



Scan



Analyze



Report



Documentation Quality

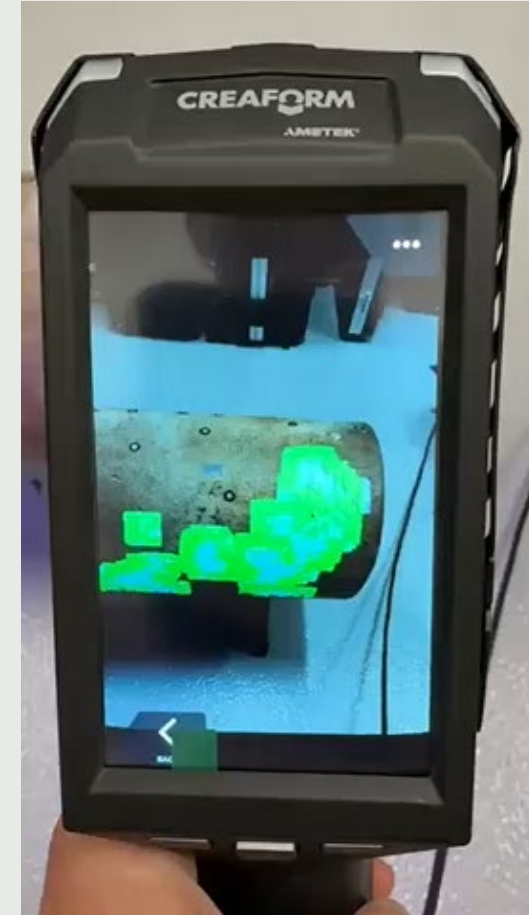
3

Augmented-reality Documentation

Document your finding like never before

Benefits

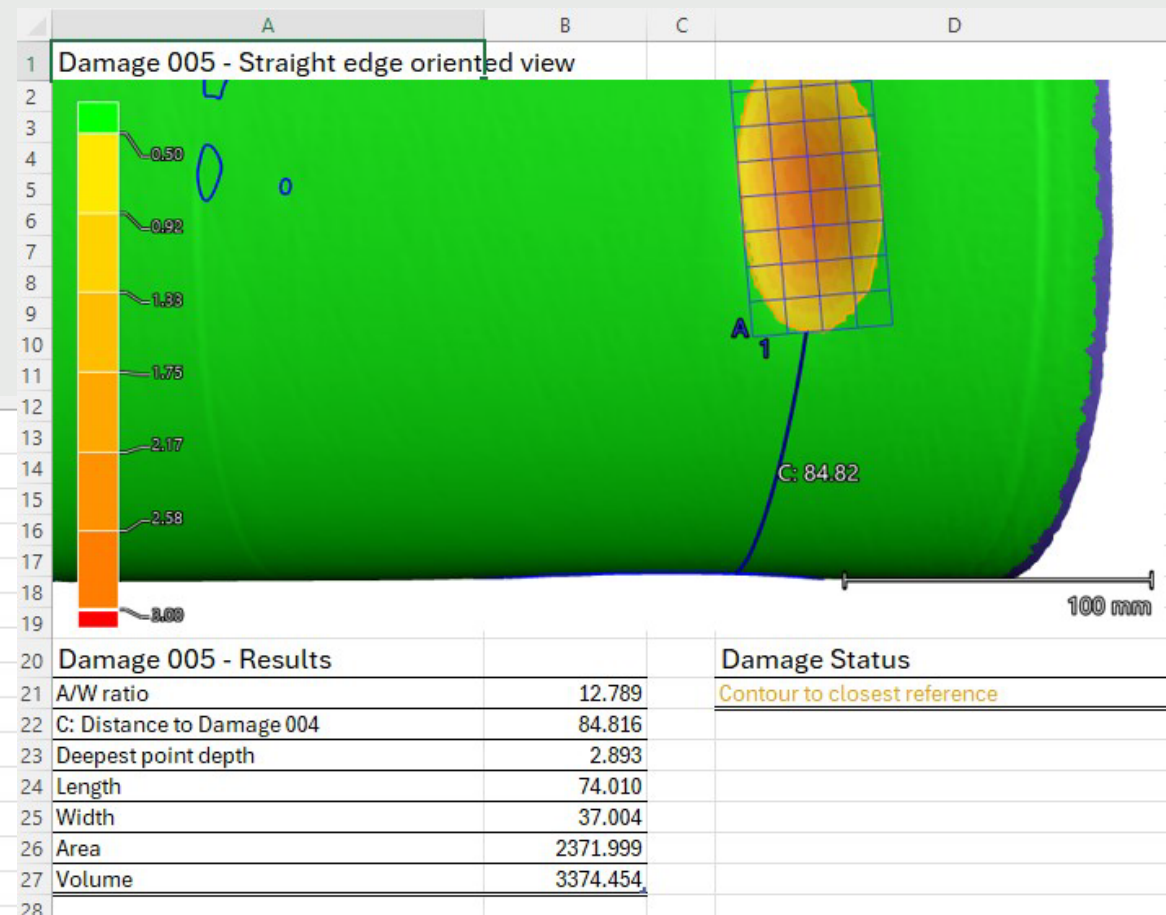
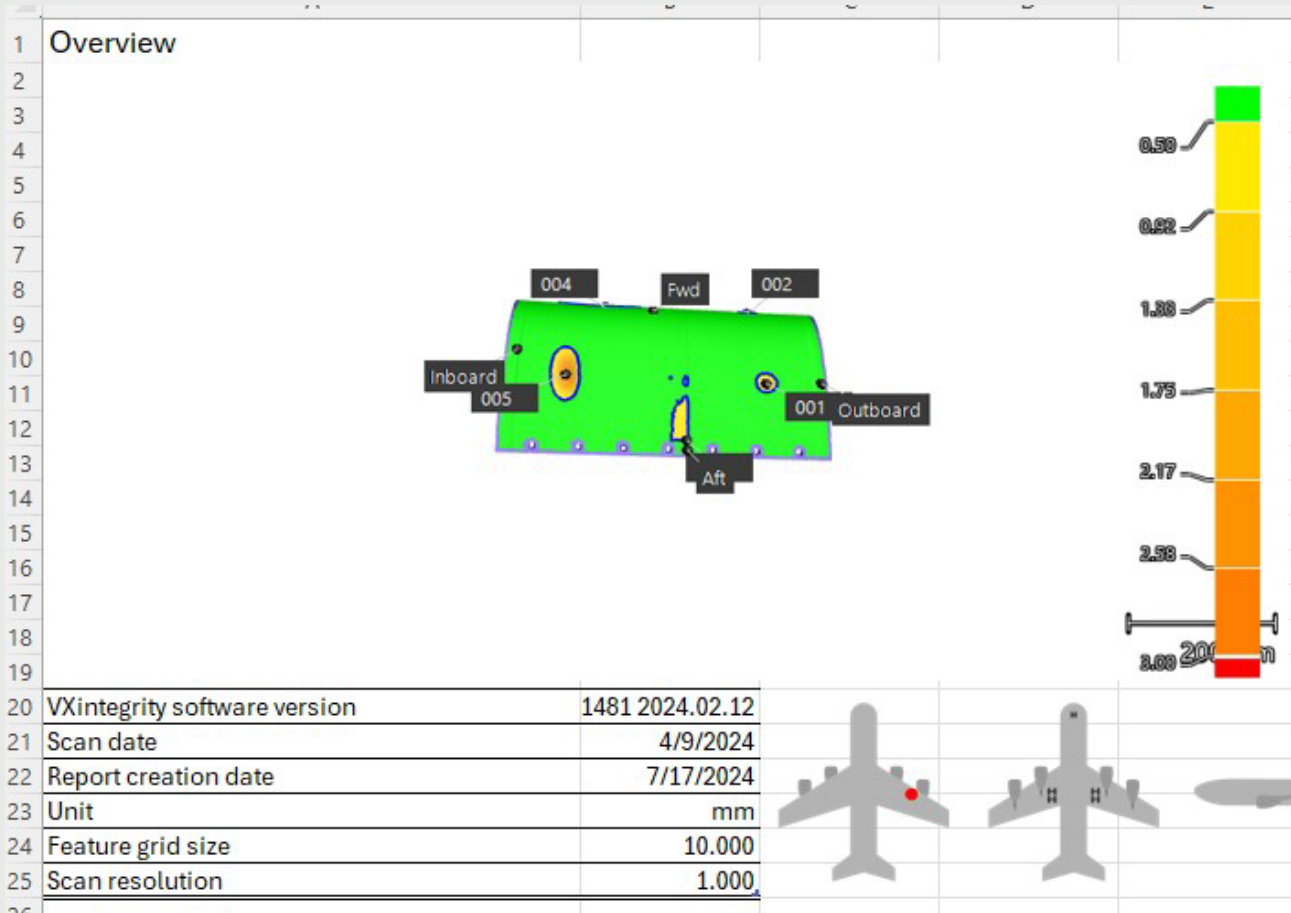
- Minimizes the likelihood of transcription mistakes during report generation
- Improves the quality of communicated inspection results
- Standardizes reports across the entire organization





Documentation Quality

Report Details





Analysis



Post Scan Analysis

Strain-based analysis -- 3D radial depth/bulging colormap

Analysis Tool Kit

- Aircraft Blend Inspection
- Corrosion Depth Analysis on any Surface
- Damage Monitoring Over Time
- Depth Grids





Mobility Kit

Wireless Data Collection



Reliable and Accurate

- Same trusted performance as a wired connection
- No compromise on accuracy or reliability

Easy to use

- Compact module designed for quick, secure belt attachment
- No bulky external router, no external power required
- Swappable batteries, easy to install and remove

Ergonomic

- Certified, safe batteries with built-in protection against overheating
- Comfortable belt-mounted design





Mobility Kit

Wireless Data Collection



3D Scanner Specifications – HandySCAN EVO Elite



HandySCAN EVO Elite™



Accuracy

0.020 mm (0.0008 in)

Volumetric accuracy

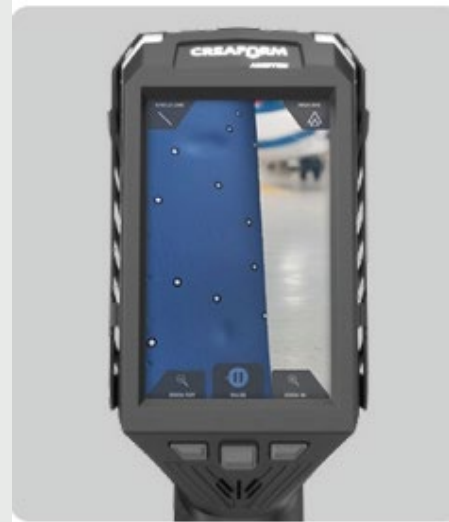
**0.020 mm + 0.020 mm/m
(0.0008 in + 0.00024 in/ft)**

Measurement resolution

0.025 mm (0.0010 in)

Measurement rate

2,800,000 measurements/s



Scanning



Augmented Reality Analysis



Reporting

Photo Camera Integration - Ability to document the inspection process photos automatically linked to the 3D model

<https://www.creaform3d.com/en/products/portable-3d-scanners/handyscan-3d-evo-series/technical-specifications>

3D Scanner Specifications – HandySCAN MAX EVO Elite



HandySCAN MAX EVO Elite™



Accuracy

0.075 mm (0.0030 in)

Volumetric accuracy

**0.075 mm + 0.010 mm/m
(0.0030 in + 0.00012 in/ft)**

Measurement resolution

0.04 mm (0.0016 in)

Measurement rate

2 250 000 measurements/s



Scanning



Augmented Reality Analysis



Reporting

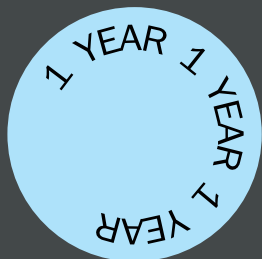
Working Distance - 0.30 to 2.50 m (1.0 to 8.2 ft)

Depth of Field – 1 to 15 m (3.3 to 49.2ft)

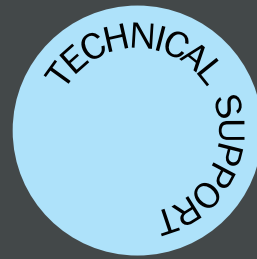
<https://www.creaform3d.com/en/products/portable-3d-scanners/handyscan-3d-max-series-for-large-objects/technical-specifications>



Stellar Support Around the World



**1-year warranty,
software updates, e-learning
content included**



**Multilingual
technical support**

**4 REPAIR CENTERS +
17 SERVICE CENTERS**



Canada



France



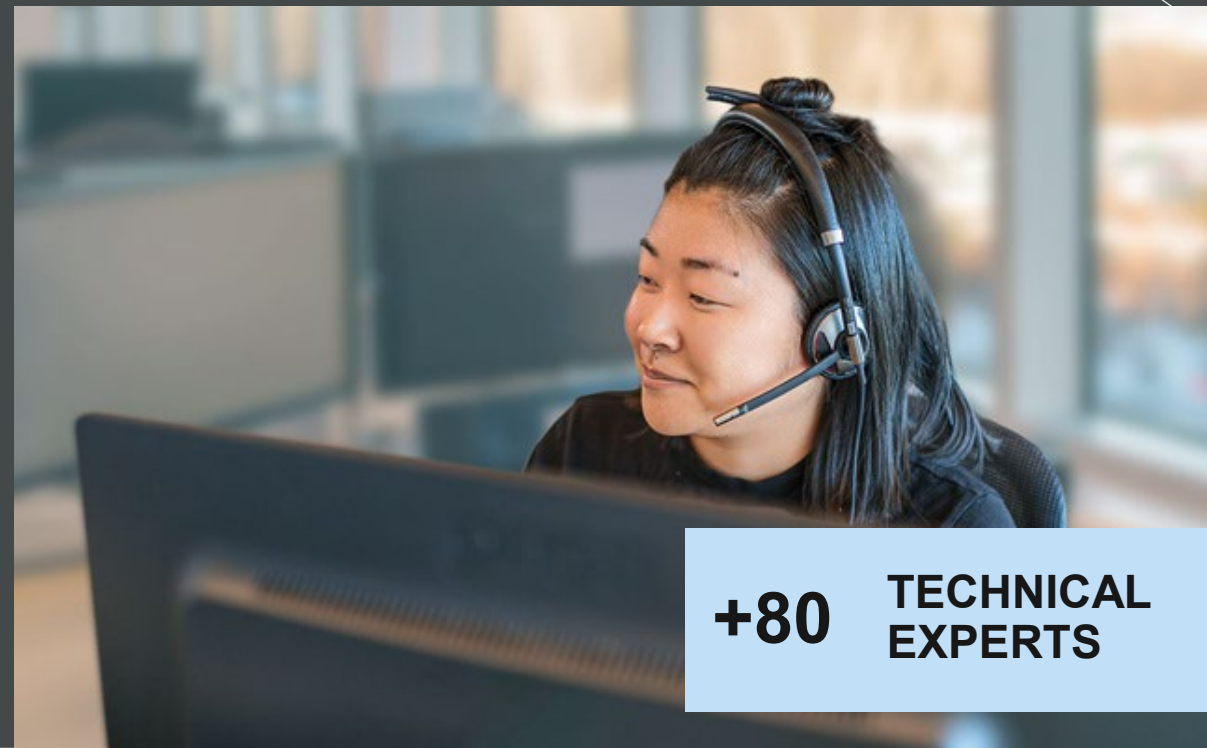
China



Japan

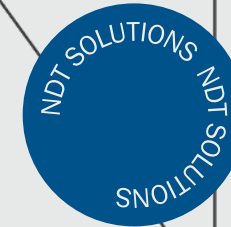
Support centers

Canada, France, China, South Korea, Japan, USA,
Mexico, Italy, Spain, Germany



**+80 TECHNICAL
EXPERTS**

Enhancements in 3D Scanning for Aircraft Inspection



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