

Challenges In Aerospace Borescope Inspections

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Challenges in Aerospace Borescope Inspections

Inspection technology has advanced dramatically, but many organizations still face the same fundamental challenges: **achieving consistent inspections, making that data accessible, and turning it into actionable decisions** that reduce quality escapes and increase engine availability.

Industry Data Challenges:

- Consistency across global inspection teams
- Capturing the right view every time
- Finding critical information quickly
- Reporting quickly and consistently
- Communicating in a disconnected inspection network

Consistency Across Global Inspection Teams

Challenge: Achieving consistency across global inspection teams

Common problems:

- Different inspectors documenting differently
- Tribal knowledge
- Inconsistent defect classification
- Variation between facilities

Solutions:

- Standardize inspection procedures digitally
- Step-by-step inspection plans on device
- Consistent data capture requirements
- Procedures distributed across sites & vendors

At the start of Inspection user will be asked for:

ESN * ^{Live}	Customer	Engine Work Order/Shop Visit Number	Inspection Type	Facility	Inspector
Engine Model	TSN	CSN	AMM / ESM Revision Reference	Date *	Time *
Input Requirements Revision	History Card Operation	A/C Type	A/C Reg	Engine Position	

✓ LEAP-1A DJI 03-2

- > VERIFICATION BLOCK
- > LPC
- > HPC
- > COMBUSTOR
- > HPT
- > LPT
- > SB & AD
- > ADDITIONAL INSPECTION

- No significant defect found
- Blend
- Bulge
- Burr
- Corrosion
- Crack
- Curl

- Not Serviceable ▾
Rejected
- Not Serviceable ▾
Within repairable limits
- Permitted with Limit ▾
Accepted - reduced CIS
- Permitted with Limit ▾
Accepted by DR/DICA
- Serviceable ▾
Accepted

Capturing the Right View Every Time

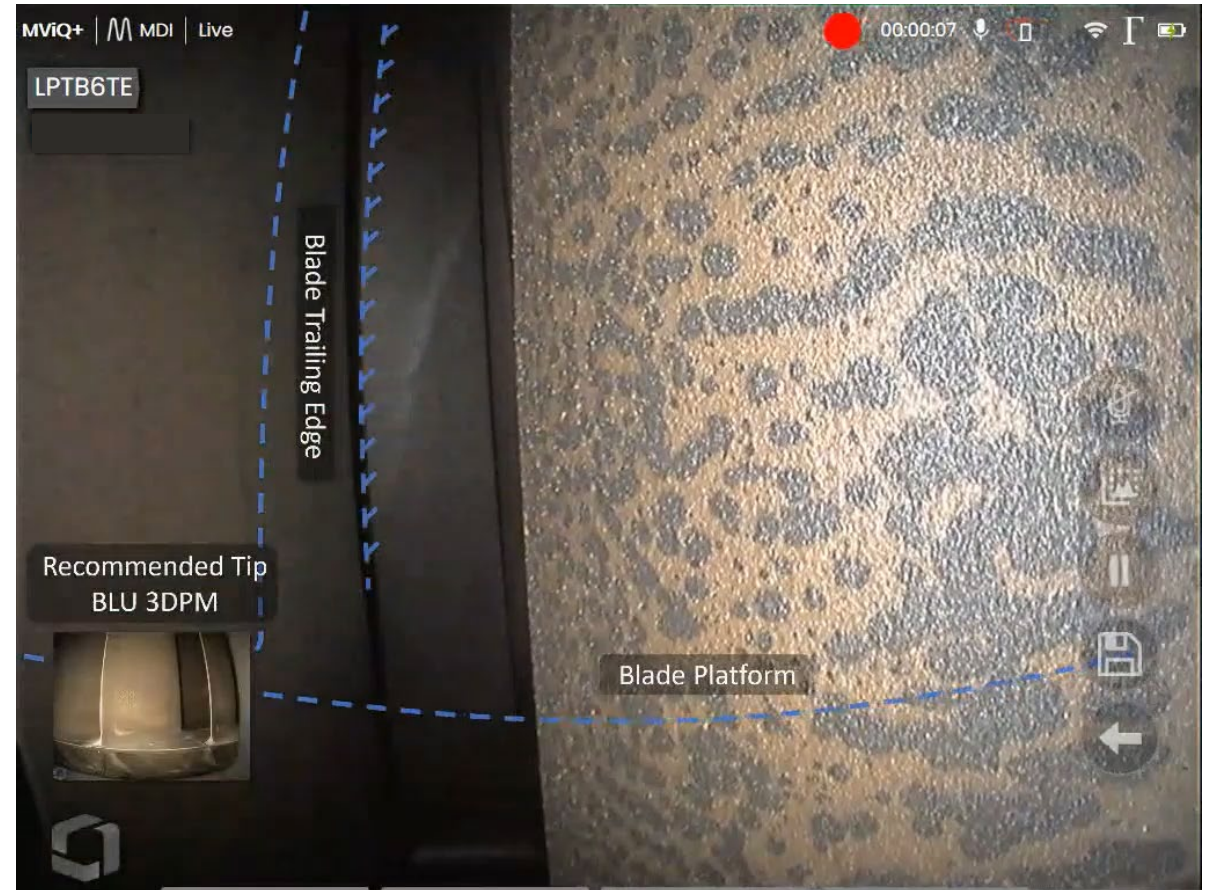
Challenge: Ensuring inspection images are always captured from the correct perspective

Common problems:

- Difficulties achieving required AMM viewing angles
- Inconsistent image capture between inspectors
- Engineering or OEM requests additional images
- Reliance on experience

Solutions:

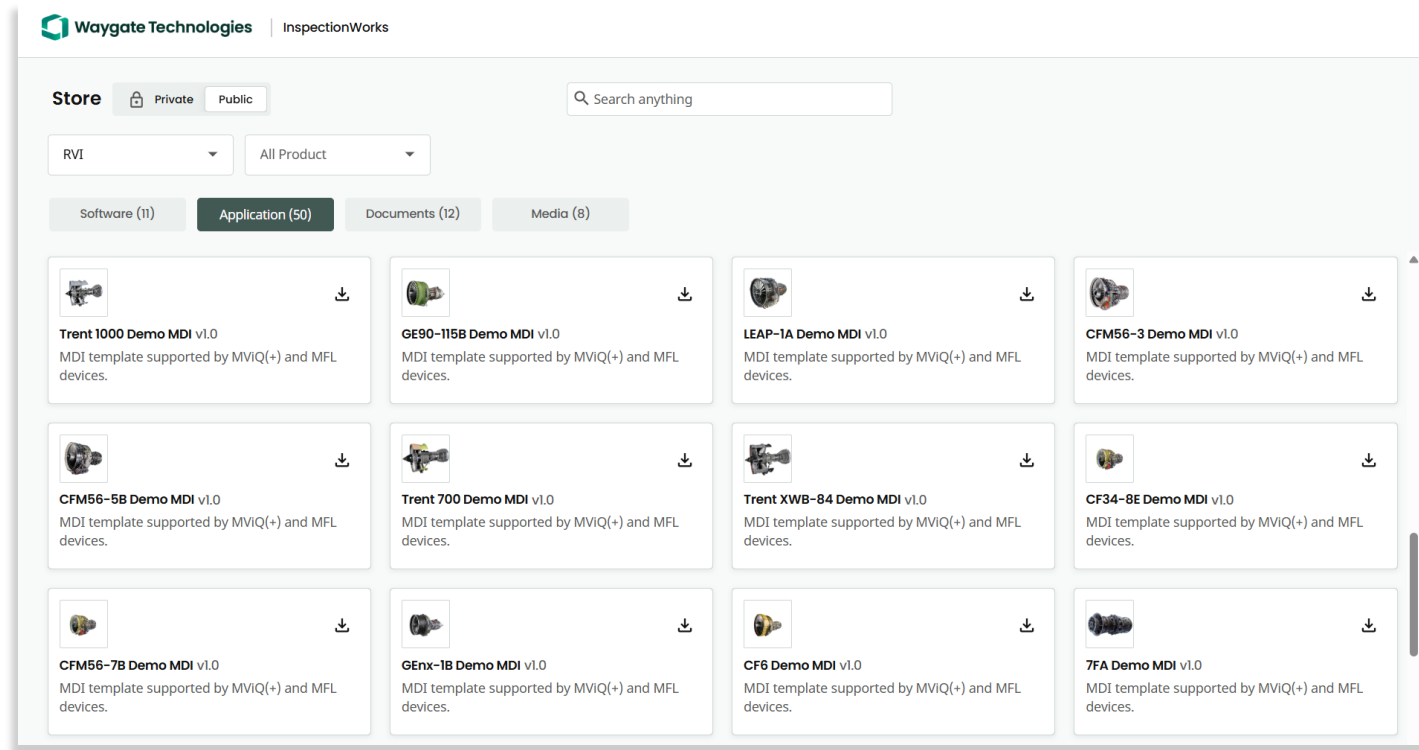
- Visual probe positioning guidance
- Standardized viewing angles
- Embedded expert knowledge



Industry-Wide Push for Inspection Standardization

Leading OEMs are driving greater inspection standardization to improve consistency, decision making, and fleet reliability. OEM-provided inspection templates, overlays, reference images, and guidance are examples of this trend.

Standardized Inspections → Consistent Results → Improved Defect Evaluation → Better Maintenance Decisions → Increased Asset Uptime



Finding Critical Information Quickly

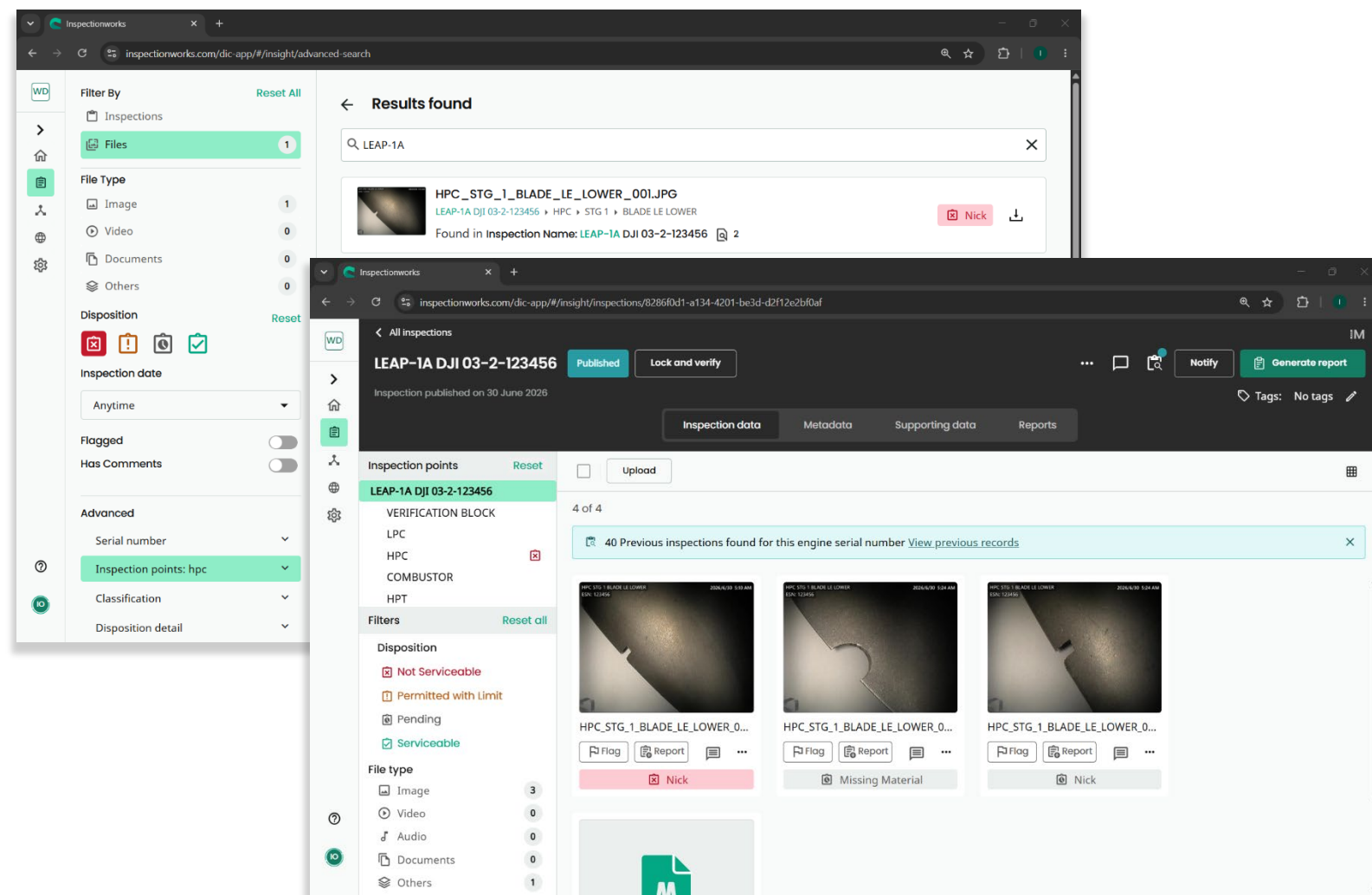
Challenge: Inspections are not stored in a usable, searchable format

Common problems:

- Often using tools like SharePoint
- Data buried in folders and subfolders
- Inconsistent file naming
- Images disconnected from findings and context
- Difficult to find and leverage historical data

Solutions:

- Structured inspection records
- Searchable findings
- Inspection-centric organization
- Inspection findings and context retention



Reporting Bottlenecks & Challenges

Challenge: Shortening the path from inspection to report

Common problems:

- Manual report creation
- Copy/paste and formatting errors
- Delay in delivery
- Inconsistent report formats and outputs

Solutions:

- Standard report templates
- Automated report generation
- Consistent outputs
- Faster review cycles

The collage illustrates the transition from a physical handheld inspection device to a digital web application. A green arrow points from the device to the web app. The web app interface includes a sidebar with filters, a main content area with summary tables, and a bottom navigation bar. The summary tables show inspection results for various modules, with a 'Not Serviceable' status highlighted in red.

LEAP-1A DJI 03-2-123456
Inspection Date: 30 June 2026

Inspection details

Customer: ABC123
Engine Work Order/Shop Visit Number: 123456
Inspection Type: Routine
Facility: HOU
Inspector: John
Engine Model: C120
Title: C120
AUM / EDA Revision Reference: 123456
Input Requirements Revision: 123456
History Card Operator: A/C Type: A/C Eng
Engine Position: Service Kit

Inspection summary

Serviceable ☒ Permitted with Limit ☐ Not Serviceable ☐
Pending ☐

Module	Complete	Disposition	Flagged	Videos
VERIFICATION BLOCK	No	0	0	0
LPC	No	0	0	0
HPC	No	1	0	0
COMBUSTOR	No	0	0	0
HPT	No	0	0	0
LPT	No	0	0	0
SB & AD	No	0	0	0
ADDITIONAL INSPECTION	No	0	0	0

Module summary

Module	Disposition	Remarks
VERIFICATION BLOCK	-	Enter text here
LPC	-	Enter text here
HPC	Not Serviceable	1 Rejected - NEEDS TO BE SERVICED
COMBUSTOR	-	Enter text here
HPT	-	Enter text here

Filters

- Inspection summary ☐ Exclude
- Module summary ☐ Exclude
- Detailed summary ☐ Exclude

Add details with disposition status

☒ Not Serviceable ☒ Permitted with Limit
☒ Pending ☒ Serviceable

You can update the remarks directly on the module summary table. We have provided a quick summary based on device findings.

You can update the remarks directly on the detailed summary table. We have provided a quick summary based on device findings.

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Connecting the Inspection Network

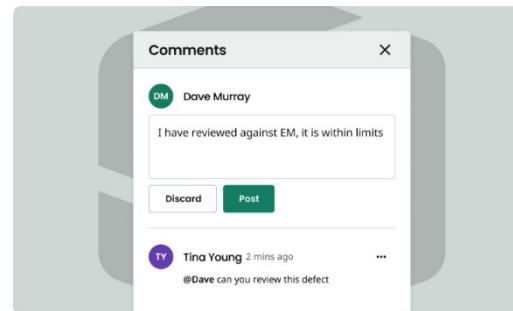
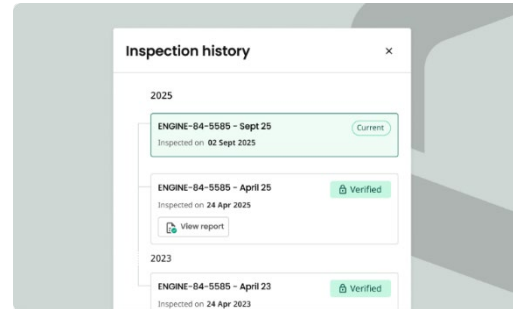
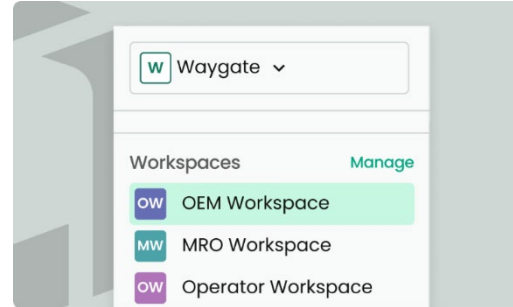
Challenge: Connecting inspectors, engineers, OEMs, and 3rd party vendors

Common problems:

- Fragmented inspection ecosystem – no one source of truth
- Communication delays between stakeholders
- Repeated questions and rework
- Inconsistent channels

Solutions:

- One source of truth for inspections
- Shared platform for all teams – internal and external
- Collaborative environment
- Connect asset owners, service providers, and OEMs



OEMs

- ✓ Share inspection templates and best practices
- ✓ Securely view inspection data from service providers and asset owners
- ✓ View trends and monitor defect progression
- ✓ Resolve queries for asset owners

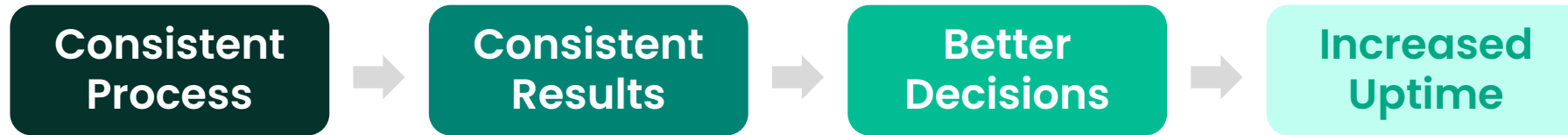
Asset Owners

- ✓ Centralize Inspection Data
- ✓ View the lifespan of their asset
- ✓ Streamline Communications between teams
- ✓ Securely share with inspections with OEMs and vendors

Service Providers

- ✓ Standardize inspection processes
- ✓ Increase efficiency through automation
- ✓ Collaborate throughout the inspection process
- ✓ Securely share inspection data with OEMs and operators

What's Next?



Today

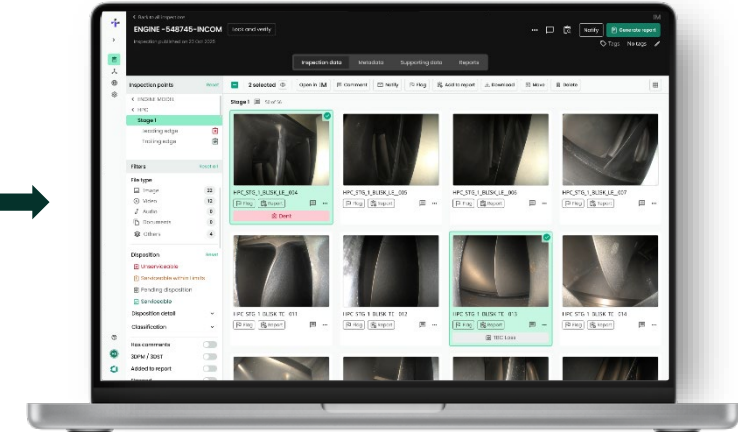
- Multiple inspectors
- Multiple sites
- Multiple systems
- Thousands of inspection images

Tomorrow

- Consistent processes
- Consistent, standardized results
- Better data-driven decisions
- **Reduced turnaround time, increased asset availability**



MViQ+



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