

“Improve global inspection efficiency, save time for disposition”

InspectionWorks Insight combined with Everest Mentor Visual IQ or Everest Mentor Flex VideoProbe and Menu Directed Inspection (MDI) enables intuitive global inspection data aggregation for airline and OEM inspectors throughout an engine's lifespan

Waygate Technologies helped a globally operating aircraft engine supplier to set up a cloud-based inspection management application which provides in-service borescope inspection data at scale. Both companies have been working together trustfully to simplify Maintenance, Repair and Operations (MRO) for a long time.

The customer required a new solution to provide, manage and leverage in-service borescope inspection data at scale and to seamlessly aggregate the collected data globally over the life of an engine. This improves overall efficiency of inspection, and unlocks in-service inspection data analytics for engine health monitoring (EHM).

Benefits

- Saving 4 hours per inspection by minimizing inspector effort spent on non-inspection tasks
- Efficient Data Exchange: The ability to seamlessly share data internally business unit and externally with asset owners or airline operators.
- Maximizing efficiency and traceability of inspections
- Reducing cycle time through automatically transferred data from device to repository
- Ensuring data and reporting consistency across all shops globally
- Deviation prediction at fleet level through data feed into quality systems
- Design improvements through data feed into engineering
- Tracking of asset health over time by using inspection data
- Reducing time to disposition

Challenge

As an aircraft engine manufacturer with global service and MRO shops in multiple and distributed locations, the customer faced the challenge of implementing an inspection management system to improve efficiency at inspector and operator level. Another key objective of the project was to provide the customer with a system that generates in-service borescope inspection data, at scale, to unlock the potential of data analytics.

In the past, the customer faced numerous challenges at various organizational levels:

“Waygate Technologies InspectionWorks Insight combined with Mentor Visual iQ and Menu Directed Inspection provides a platform where we can easily aggregate inspection data across the world for the life of an engine and leverage the potential of inspection data analytics. This leads to hours saved in inspection time and days in getting precious engine data back to our engineering team.”

Customer Voice

At the inspector level

- Inefficient use of Inspector time (time spent on non-inspection tasks)
- Alignment of dispatch with receipt inspections
- Inspections dependency on human reliability
- Manual report generation
- Manual transfer of data from borescope to storage

At operational level

- Inconsistent inspections and data across inspectors and locations
- Unstructured data
- Lack of metadata
- Inconsistent reporting formats
- Disconnected systems requiring manual updates

Resulting in significant loss of time and efficiency at every level

Overall, the customer was capturing a lot of time-series data via on-board sensors and very little in-service inspection data. Providing consistent in-service borescope inspection data at scale unlocks the potential of data analytics, in particular towards engine health monitoring to gain competitive advantage

To address these challenges, Waygate Technologies worked with the customer to develop this comprehensive solution for managing and utilizing inspection data.

Solution

Waygate Technologies and the customer engaged in intensive cooperation and evaluation to identify the best possible solution for the customer's requirements. InspectionWorks Insight combined with Everest Mentor Visual iQ Videoprobe and Menu Directed Inspection proved to be the best scalable solutions to improve inspection efficiency while managing and leveraging inspection data. In addition, InspectionWorks Store guarantees centralized distribution of inspection software, documents, media and applications.

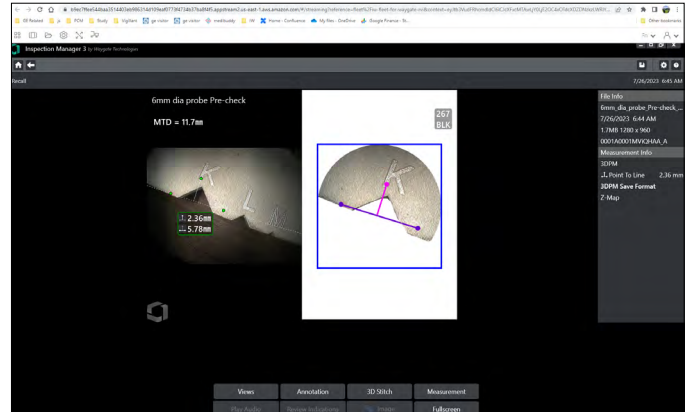
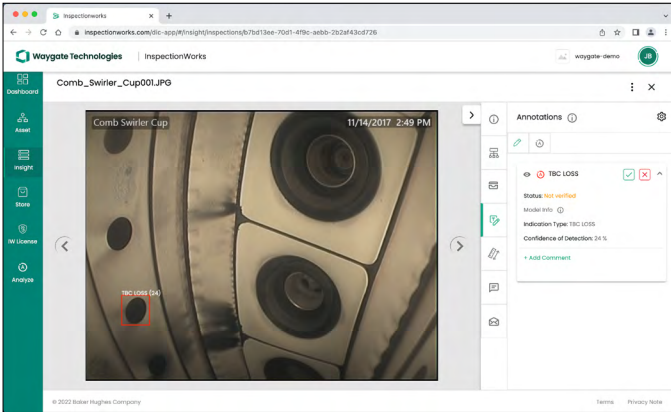
InspectionWorks Insight is a secure cloud storage and inspection data management environment that ingests data directly from all IW-enabled devices or PCs. Data is structured according to the operator's inspection plan, along with metadata collected during the inspection, so it can be accurately analyzed, reported, and shared with relevant teams or indeed with customers if applicable.

After the initial pilot program to drive customer engagement across all departments, the solution consists of three components, data acquisition with visual inspection instruments, data storage, report generation, and finally centralized content distribution.

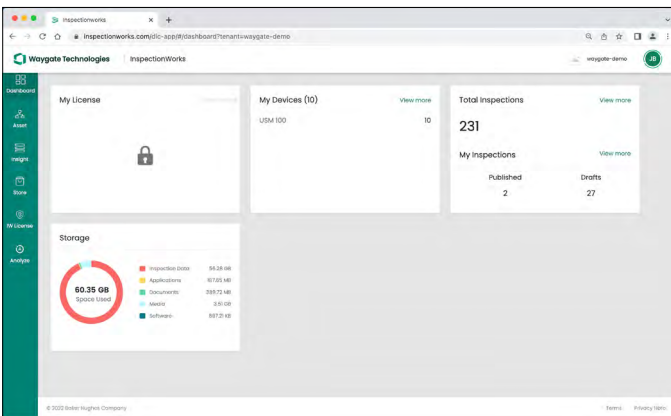


On the customer's cloud, the inspection data is acquired using Waygate Technologies' borescope Everest Mentor Visual iQ VideoProbe and Menu Directed Inspection. InspectionWorks (IW) Insight allows seamless and wireless integration with the borescope hardware through Push2IW which ingests the data directly. The data is structured per the customer's inspection plan, with metadata from the inspection, making it easily analyzed, reported, and shared with the engineering department and internal customer software.

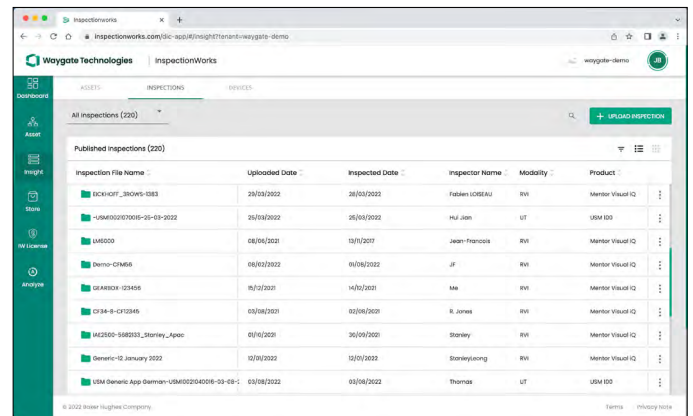
InspectionWorks Insight classifies results from multiple inspection sources to create a comprehensive asset health overview with a complete inspection history in the cloud. The customer can now not only retrieve the data of all inspections and detailed information about them, no matter how long ago they took place, but also exchange or add comments and share the collected information. This provides optimal conditions for seamless collaboration and ensures that even the smallest assessment is not lost amongst the daily volume of data.



View various inspections and images, add comments, tag, and share with other users for easier decision-making



The dashboard displays all of the most important information at one glance



Metadata, such as the product ID and the inspector, are saved for an optional overview

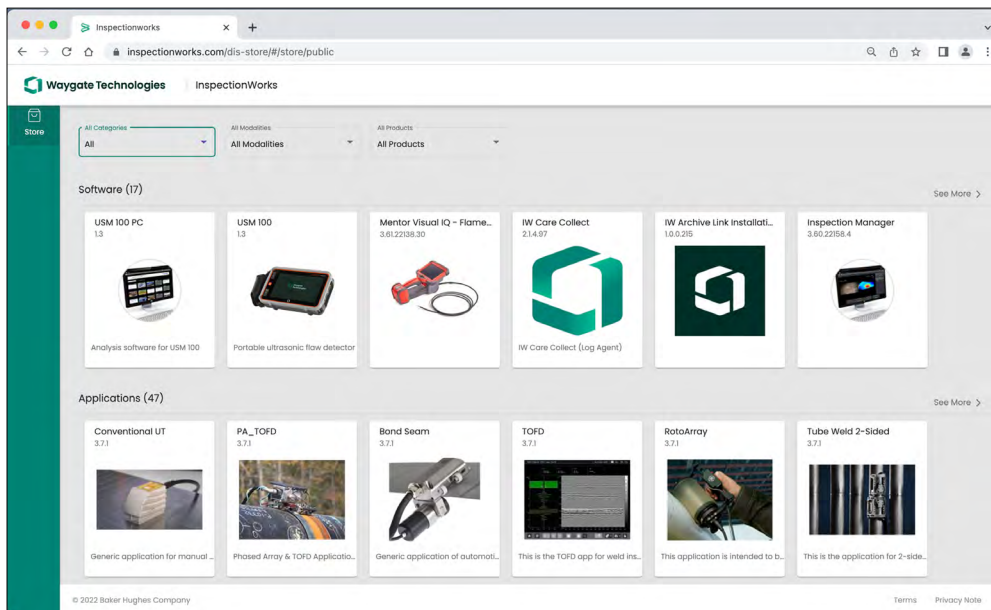


“We at Waygate Technologies recognize the power of collaborating with large industrial partners on the digitization of their inspection process; we successfully helped our customer to increase productivity and even turned what was a pure cost into value generation for their engineering department. We look forward to more successful collaborations with other companies who want to simplify how they run inspections.”

Alexis Herve,
Director Global Operations - InspectionWorks
Waygate Technologies

With InspectionWorks Store as the third element of the solution, Waygate Technologies enables the customer to gain significant time savings with the help of remote and centralized distribution of customized inspection

algorithms and workflows. Software updates, applications, documents, media and other content are now available with just a few clicks and can be accessed directly from any IW-enabled device or PC.



IW Store: everything from latest inspection software updates, documents, applications to training videos.

Results

Easy and efficient aggregation of in-service borescope inspection data and analytics engine health is crucial for today's aircraft engine manufacturers and service providers to be competitive and ensure safety and quality. By deploying InspectionWorks Insight, Waygate Technologies helped to achieve significant efficiency and productivity benefits:

- Minimize inspector time on non-inspection times
- Maximize inspection efficiency
- Efficient Data Exchange: The ability to seamlessly share data internally within business unit and externally with asset owners or airline operators.
- Reduced cycle time through automatized data flows from initial inspection to final report generation, from device to storage in cloud and data disposition
- Data consistency and automated reporting across all shops worldwide

- Defect prediction at fleet level through data feed into quality
- Design improvement through data feed into engineering
- Health tracking of assets over time using inspection data

The development of a large dataset of borescope inspections allows the customer's data and analytics team to uncover more insights around specific engine health and performance and also fleet performance for individual operators. The customer's new central repository for borescope inspections from InspectionWorks now collects data from 12 MRO shops. This customer plans to expand InspectionWorks Insight to further, and integrate with other processes for optimal operations.

In summary, the solution developed for the customer, InspectionWorks Insight, results in significant productivity gains, measured at 15 percent by reducing inspection time and time to disposition.



InspectionWorks: A Non-Destructive Testing Software Platform for the Future

InspectionWorks is a software platform that combines data from multiple non-destructive testing (NDT) tools, and connects the entire inspection history of all assets. It helps to acquire, analyze and act on inspection data. It enables adding inspection insights to a digital twin throughout its lifecycle. This transforms inspection data into a tool for faster and better decisions, saving costs and enabling a more competitive product.