SOLUTION OVERVIEW

SPIRAL
TECHNOLOGY

https://spiral.technology/

Problem

Industrial downtime caused by poor management of enterprise assets

$650 billion

global cost of downtime in the manufacturing every year

Cost of downtime

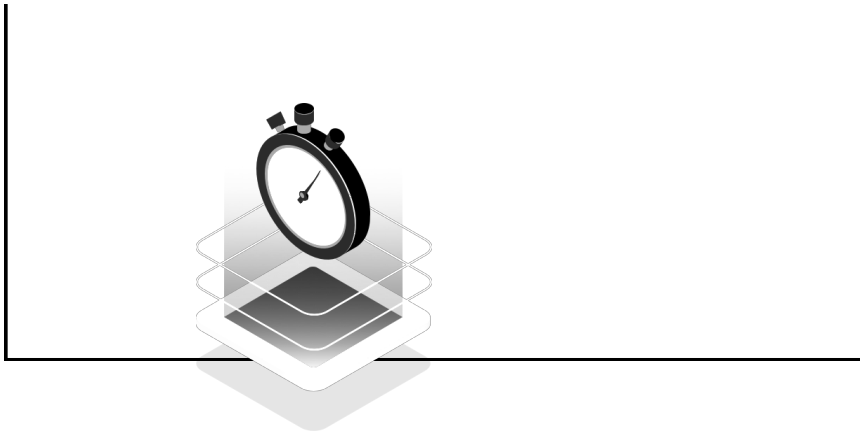
DIRECT

- Lost sales and unfulfilled contracts
- Production line repair
- Overtime labor
- Restoring operations

INDIRECT

- Negative publicity
- Environmental harm
- Worker safety incidents
- Production spoilage

Applicable industries



800
hours per year

duration of downtime for an average manufacturer

$22,000
per minute

cost of unplanned downtime in the automotive industry

2 – 5%

volume lost in petrochemical plants due to unplanned downtime

10x

cost of unplanned downtime vs cost of scheduled downtime

*Sources: International Society of Automation, Advanced Technology Services Inc, ARC Advisory Group, Industryweek

Solution

Mixed Reality provides superpowers to engineers increasing their productivity and decreasing number of mechanical errors

Use cases

- Repair & maintenance
- Safety & inspection
- Equipment installation
- Plant commissioning
- Complex assembly
- Education and training

Benefits reported*

11% lower operating costs

17% lower work error rate

8 – 12% increase in mechanic efficiency

46% increase in productivity

Production time decreased by **25%**

Reduced error rates effectively to **zero**

20 – 32% average increase in productivity

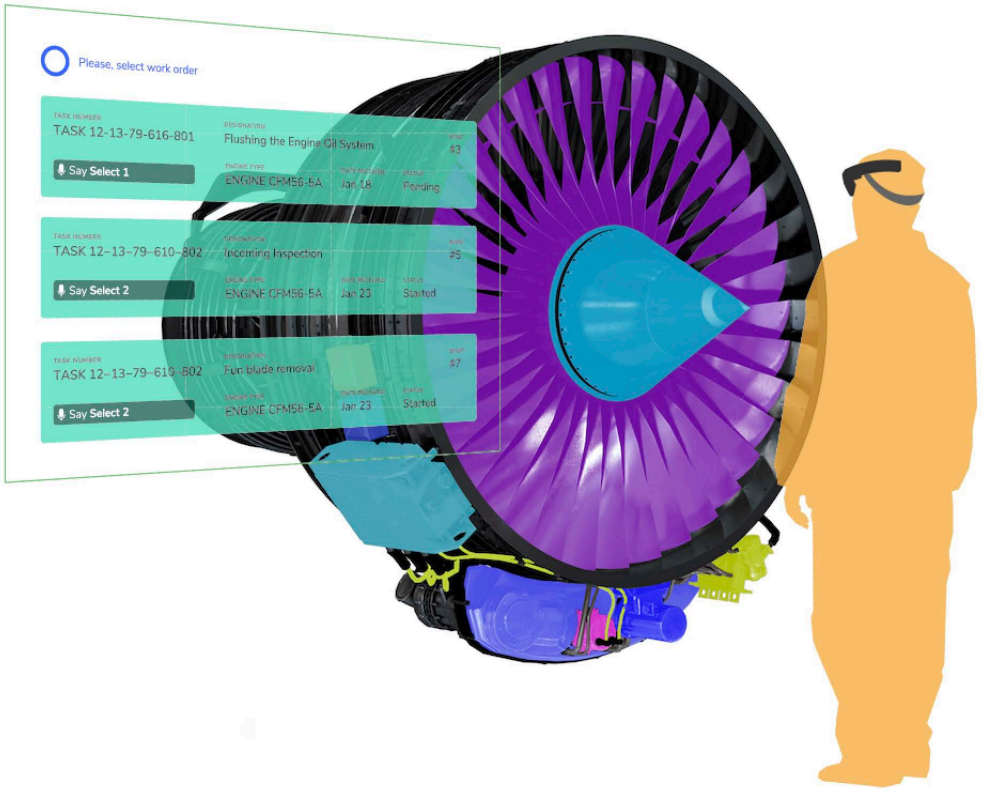
Tools

- Interactive manuals
- Remote collaboration
- AI-powered failure prediction
- Access to the real-time data
- Voice controlled checklists
- Immersive 3D graphics

*Reported by Boeing, General Electric, KPN, Coca-Cola, Toyota

Solution

Use cases include remote calls and video streaming, object recognition, display of static information, interactive assistants and 3D visualisation among others



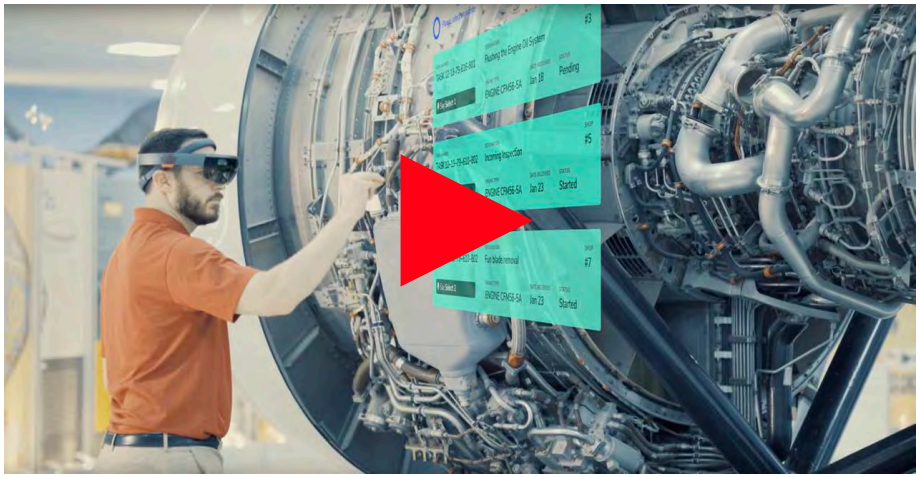
Spector is a MR platform under development by Spiral

Spector is just one product to be applied for aviation MRO. More products will be launched for the range of industries

Spiral's Platform is content agnostic therefore easily scalable for any industry or training

Solution

Overview in two videos



Spector is a Mixed Reality platform which helps to put all necessary technical knowledge in front of the eyes of the busiest technicians keeping their hands free for important tasks

PLAY VIDEO

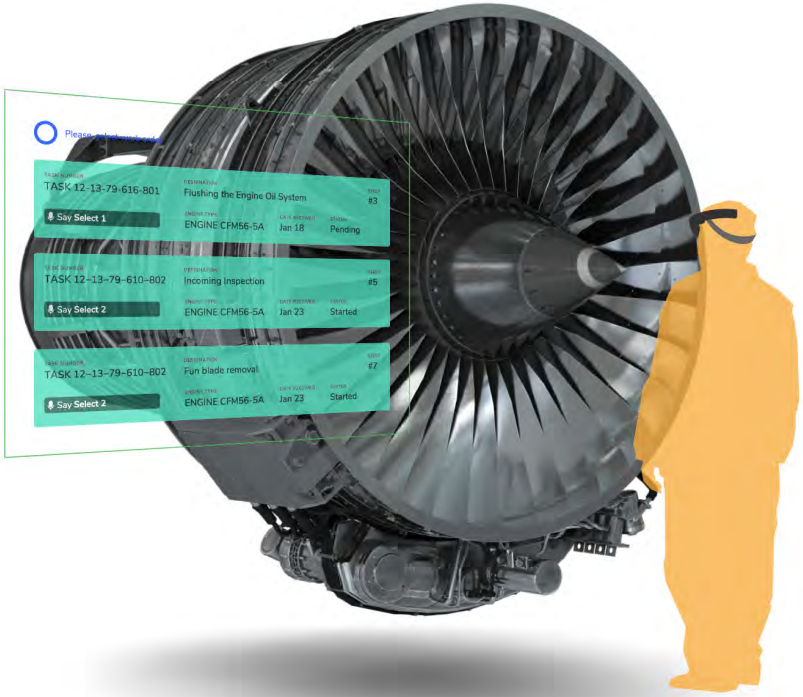
Presentation of the latest Mixed Reality solutions at the aviation MRO show organized in Dubai on 11-12 February 2019. The focus is on optimization of the engine turnaround time enabled by holographic headset providing access to digital maintenance manuals, interactive assistants, 3D recognition, video calls and streaming. Spiral Technology is on the mission to streamline the digitization of MRO

PLAY VIDEO

Solution

MRO engineer starts his shift by putting on the holographic glasses where he sees the tasks assigned for the day.

In his personal virtual workspace, he can track the task progress, check his performance statistics and access related reference materials. He reports on the completion via voice-controlled assistant and submits the report electronically. Ditch the paper



Certified inspection instructions are preloaded to the glasses. Engineer is guided through the steps by the audio or video assistant.

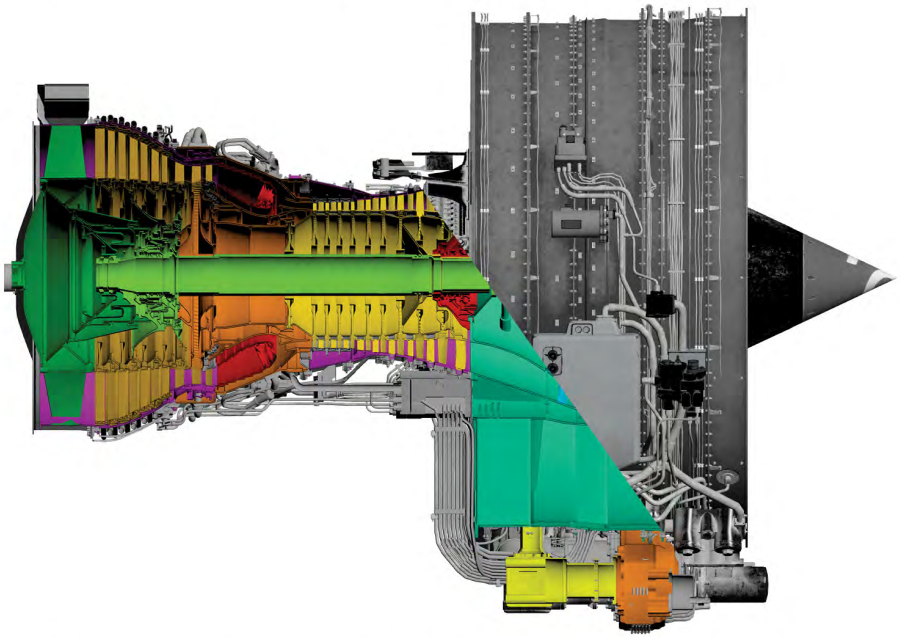
The most challenging steps are supported by virtual highlighting on top of the inspected asset. The procedure is recorded and can be checked by the supervisor at any time.

An inspection report can be prepared hands-free by ticking virtual boxes or by making the text notes with voice commands only. No paper instructions, laptop or tablet are needed anymore.

Photo, video and text notes can be made on the go, virtual tags and voice comments can be added for a next technician to take over the shift.

See the invisible

Recognition of the real-world objects with the pixel precision allows to overlay digital data on them and to show the user what is invisible otherwise.



The same algorithm allows to steer the digital application manipulating physical objects, i.e. you can “click” on the real engine or its parts and trigger the action in the application. You can literally touch the virtual

Mixed reality can help the less experienced technician to cut through the most complex parts of the engine assembly/disassembly process by providing clear and precise instructions.

If still in doubt an engineer can get real-time advice from the senior expert.