

# MOBILE INSPECTION SOLUTIONS

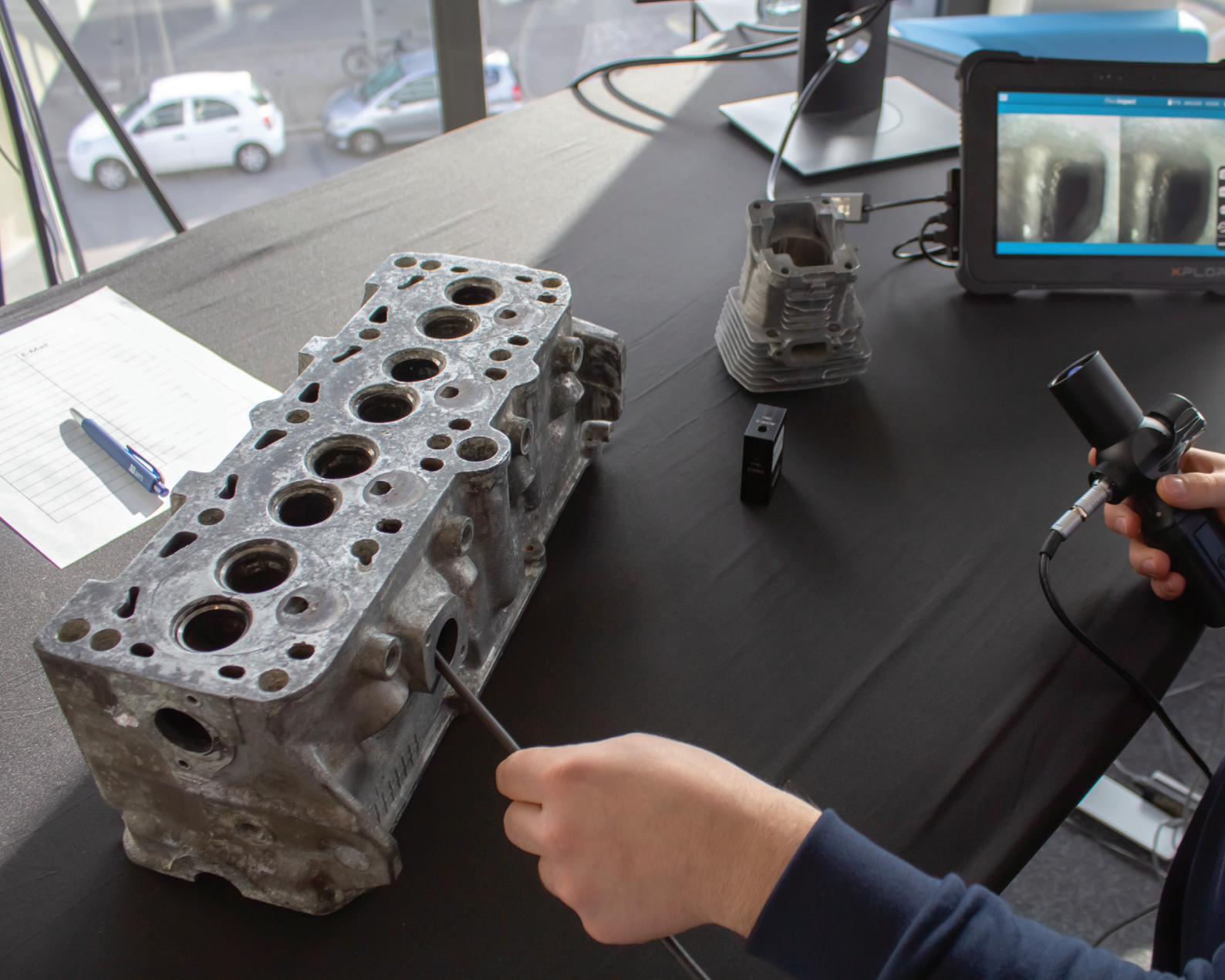
## MAKE INSPECTIONS SMARTER



# Automated Inspection Systems with 3D.aero

- 3D.aero is a tech company that develops advanced automation solutions for manufacturers and maintenance providers in the aviation industry. While our expertise lies within the aviation sector, our solutions are also suitable for any other high-maintenance industry. In the development of a new solution, we systematically support customers from the early ideation over feasibility studies up to the delivery of a turnkey solution. This provides a reliable and flexible development process in close teamwork. Our previous projects show, that our systems provide around 30-60 % productivity improvement while delivering 100% reliability and reproducibility.
- For our systems we merge optical sensors, robotics and data analytics to enable a range of functions that are needed for inspection purposes. Whether it being detailed 3D measurements of workpieces or optical detection of damages, 3D.aero delivers high accuracy and reliability. Therefore, stationary inspections, as well as mobile solutions are within our expertise.
- We aim to improve productivity, efficiency and reliability in the field of quality assurance with our tailor-made solutions for any customer.

Sharing this report outside of LinkedIn would be well appreciated and wouldn't require any special allowances.



## IS YOUR MANUAL INSPECTION PROCESS INFLUENCED BY A HUMAN FACTOR, LABORIOUS AND EXHAUSTING?

Are there many clarification cases? Are there many types of data/media in between process steps, a low percentage of digitalized information and a high demand for documentation? When time-consumption, reliability and digitization could be upgraded for a process in your company, our Mobile Inspection Solutions might be a way to improve that.



## AI2Go

AI2Go is a Mobile Inspection System that specializes in **detecting, localizing and classifying damages by using mobile devices like tablets.**

With the help of Artificial Intelligence, the cameras/sensors of mobile devices can be used to detect surface damages on workpieces. By making it possible to use this technology on a mobile device, the otherwise exhausting and time consuming inspection process can be sped up significantly by increasing the workflow efficiency. A worker can be equipped with an AI2Go device to help him detect certain damage types, while also being able to fully digitize part numbers, quantities, inspection results and other information regarding the inspected workpiece. Here, a continuous digital process is formed, where everything works in the same media type. This process saves time in spotting, manually inspecting and writing the inspection report by hand for any inspected part.

**THE MAIN GOAL OF AI2GO IS, TO SUPPORT THE WORKER IN HIS PROCESS AND NOT REPLACE HIM.**

## 3D.FlexInspect

While AI2Go can detect surface damages, 3D.FlexInspect is created to inspect damages that are otherwise hard to reach. 3D.FlexInspect is a **precise video endoscope system for the execution of three-dimensional surface inspection in hard-to-reach areas.**

The system offers different probes, where some are equipped with multiple cameras and the capability to generate 3D data. The simple and user-friendly interface is intuitive and offers full control for the operator. The monitor unit can be positioned independently of the probe, making it easy to read the data in any environment. Customers' own ideas such as a specific design, various additional functions or integration into a desired system can be implemented as required.

## 3D.FlexInspect

In cooperation with IT Concepts



## WHAT ARE THE ADVANTAGES OF MOBILE INSPECTION SOLUTIONS?

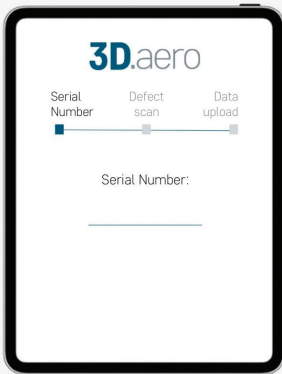
The advantages of Mobile Inspection Solutions are the **wide range of improvement possibilities**. For example, the worker is supported in the detection and digitization of an inspection routine. This helps him to be more efficient and keep the focus on the given task. The advanced help of damage detection really improves the inspection process because of the time it saves a worker to manually spot every damage on a workpiece. **AI2Go for example guides the worker, so that he knows where to look more carefully at the object**. Also, the digitization of the inspection data and results are more efficient, due to the combination of all the data from the first inspection step on. Everything is compactly combined and easy to find in general.

## WHAT CAN AI2GO DO BETTER THAN OTHER APPLICATIONS?

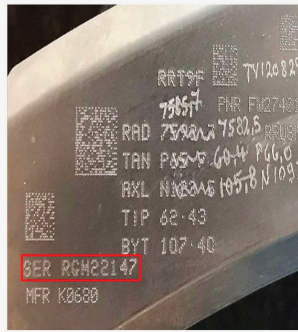
AI2Go is **able to improve the manual inspection process in many ways**. For one, the AI is able to read product labels, so every given information can be digitized head on. This base data from the product label can then be directly combined with the full inspection of the workpiece. Every damage type, position and individual assessment is saved and digitalized together with the basic part information. Therefore every detail concerning a specific inspection is always accessible and compactly saved within the system. This way, a completely digital process is created, so following process steps can be taken immediately.

## 1. AI-based Detection of Serial or Part Numbers

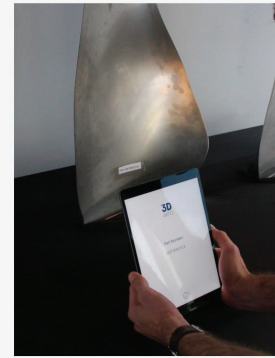
Intuitive Application



Text Detection & Extraction

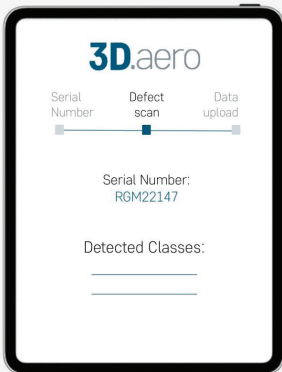


Improved Data Capturing



## 2. AI-based Defect Detection in Real-Time

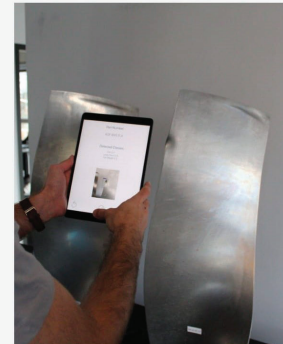
Capturing of multiple damages



Camera live view with predicted damages



Reporting of selected damages



## HOW EXACTLY IS AI2GO ABLE TO DETECT DAMAGES?

AI2Go uses the camera systems of the mobile device to get visual information of the workpiece. With this information, a specially trained Artificial Intelligence can process the images and detect damages.

**THE AI IS ABLE TO LOCALIZE AND CLASSIFY CERTAIN TYPES OF DAMAGES LIKE CRACKS, DENTS, NICKS, SCRAPES OR SIMPLY DIRT ON THE SURFACE.**

For the classification of different damages, the AI has to be trained well with a big variety of damage data. In order to reliably detect damages, the AI needs to know every facet of a specific damage. This process would normally take a very long time, but we at 3D.aero managed to create a process that is usable within the first steps of the systems installation. The AI knowledge receives further updates by adding new anomalies to the range of known damages while being already in operation.

## CONTACT US FOR:

- Smart Automation Solutions for Inspection and Production Purposes
- Integration and Adaption of innovative solutions to an existing system
- Development of suitable solutions for any specific customer needs

## ABOUT US:

- Do you have your own application in mind? Feel free to contact us!
- As a tech startup partnering with Lufthansa Technik and Pepperl+Fuchs, we combine proven automation approaches with process know-how from the aviation industry and innovations such as AI and robotics to create advanced automation solutions. At 3D.aero, we also understand that the requirements and needs for technological solutions are as individual as the company and the processes and employees behind them. That is why we have made it our mission to accompany our customers from the problem definition to the development of their own automation solution.

Contact us for further information. We are looking forward to your message!



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