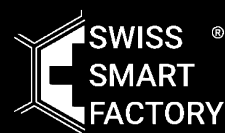


Data Labeling Not Required



March 30, 2022

Spin-off | **ETH** zürich



Microsoft for Startups



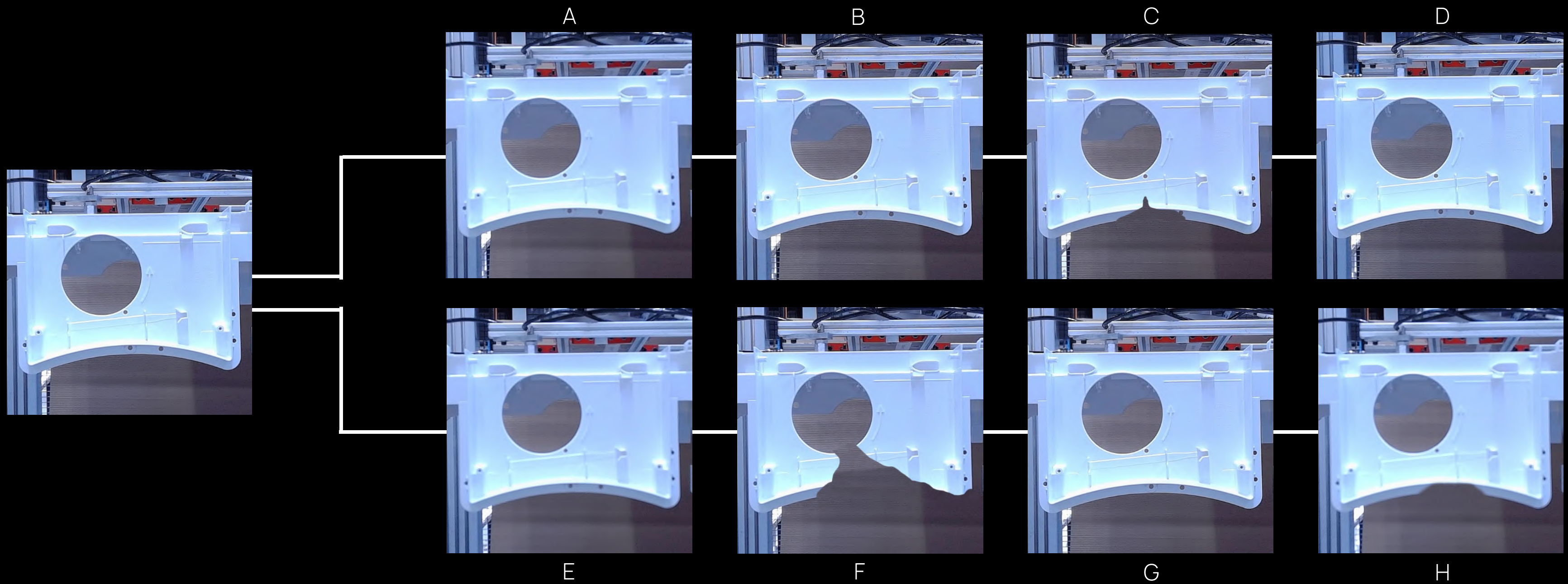


Photo by [Remy Gieling](#) on [Unsplash](#)

Visual Quality Inspection

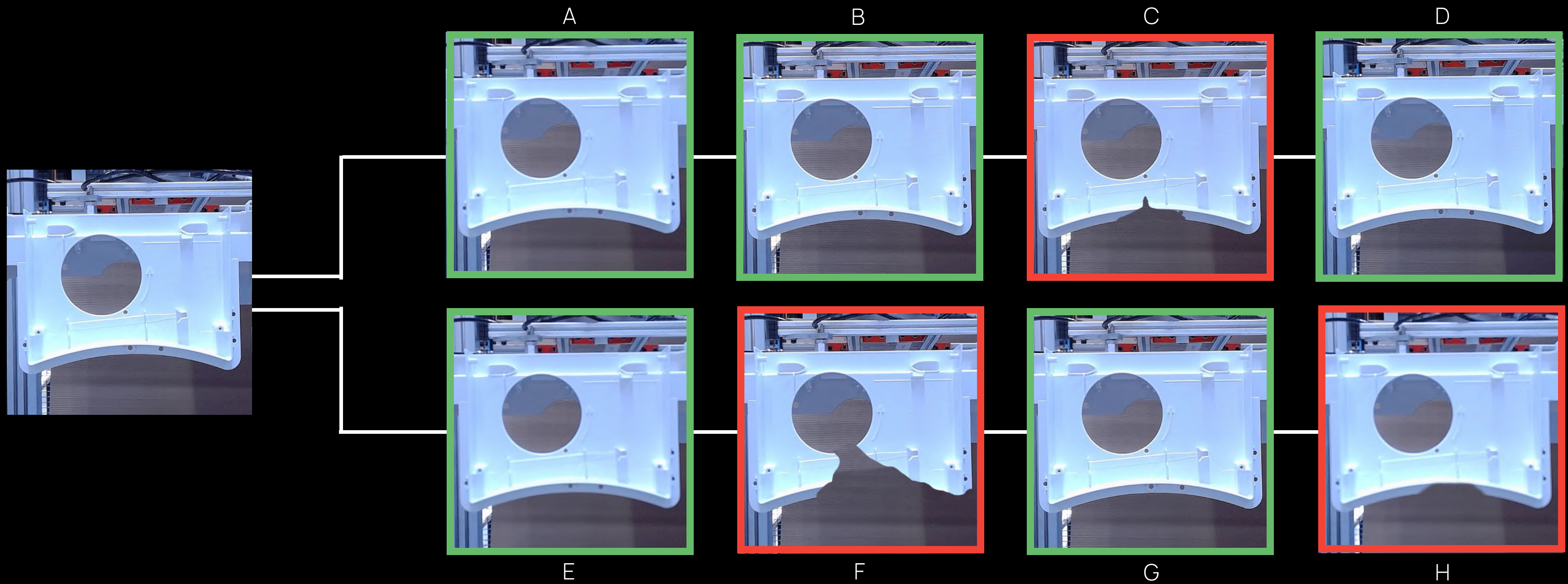
Inspection of manufactured parts using human vision, sometimes with the help of a magnifying device.

Visual Quality Inspection - Example #1



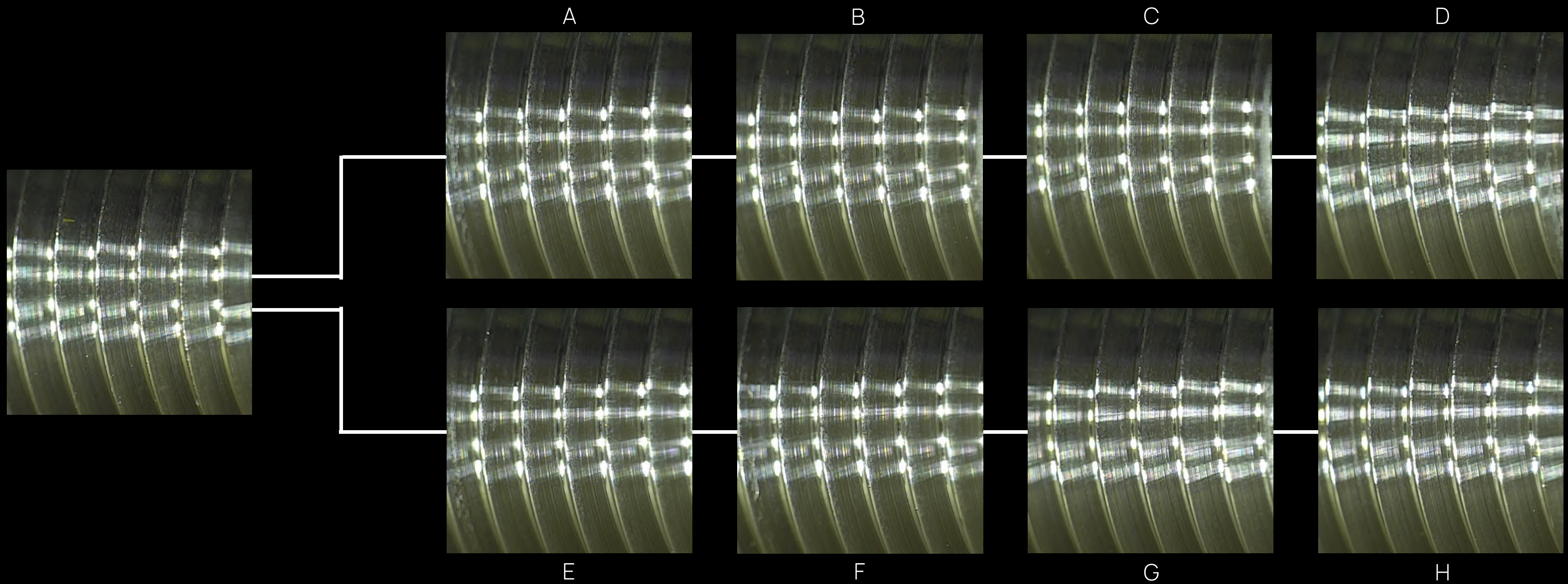
Injection molded plastic parts with a reference picture on the left, and eight samples with three containing artificially generated defects.

Visual Quality Inspection - Example #1



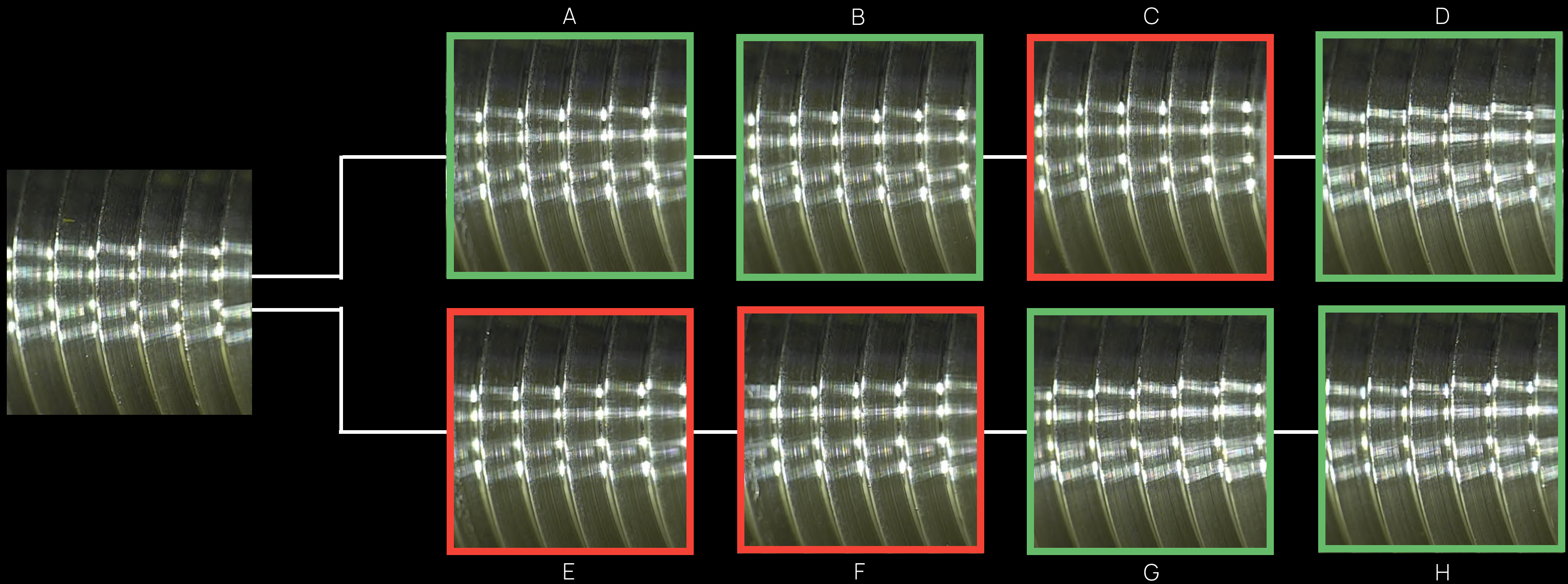
Injection molded plastic parts with a reference picture on the left, and eight samples with three containing artificially generated defects.

Visual Quality Inspection - Example #2



Aluminum threads with a reference picture on the left, and eight samples with three containing production defects.

Visual Quality Inspection - Example #2



Aluminum threads with a reference picture on the left, and eight samples with three containing production defects.

Cost of Subjective Quality

OK-OK	DK-DK	NG-NG	OK-DK	NG-DK	OK-NG
72% (378)	0.6% (3)	1.4% (7)	19% (100)	4% (18)	3% (16)

Distribution of the results of the visual inspection of 522 parts sampled from production by two different trained operators.
OK stands for good, DK stands for Don't Know, and NG stands for Not Good.

Cost of Subjective Quality

OK-OK	DK-DK	NG-NG	OK-DK	NG-DK	OK-NG
72% (378)	0.6% (3)	1.4% (7)	19% (100)	4% (18)	3% (16)

3%
Contradictory Results

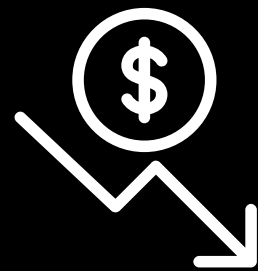
Distribution of the results of the visual inspection of 522 parts sampled from production by two different trained operators.
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3%
Contradictory Results

Distribution of the results of the visual inspection of 522 parts sampled from production by two different trained operators. OK stands for good, DK stands for Don't Know, and NG stands for Not Good.



Expensive reinspection of the parts in case of customer's return.



Loss of customer's trust and reputation

Solution

We modified the data collection process to capture the quality information straight from the operators and share it easily with the other quality stakeholders to confirm ambiguous cases.



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~10k Collected Images

(without overhead for the operators and the quality stakeholders)



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2.5x Reduction in Labor Cost

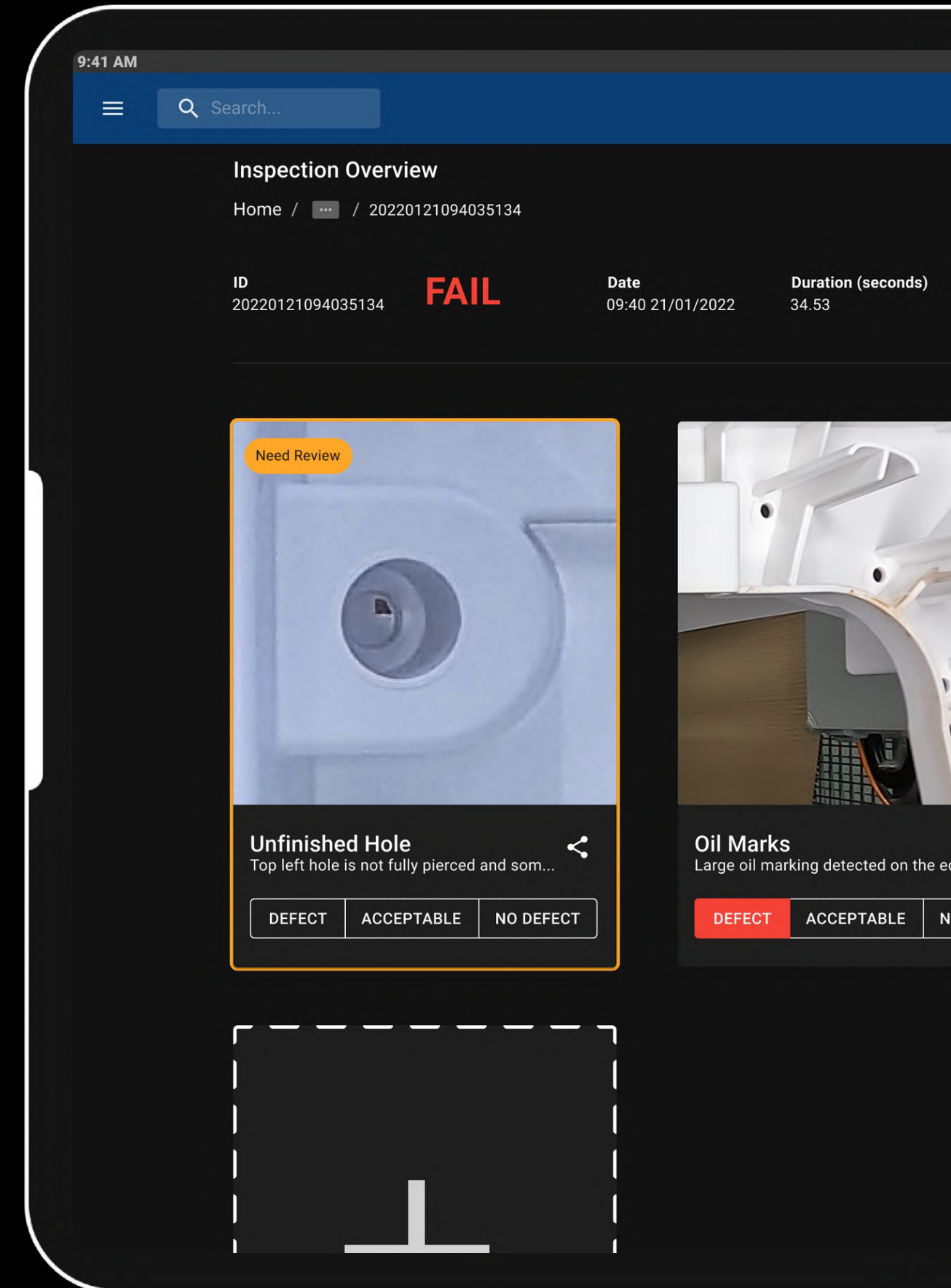
(trained operators only needed for 26% of the inspection)



Autonomous Visual Inspection Systems

Autonomous Visual Inspection Systems

Our AI and computer vision platform learns from manufacturing operators how to automate their most critical visual inspection processes.

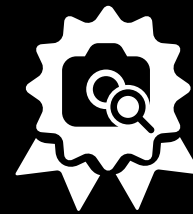


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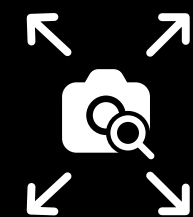
Digitalization of the visual quality knowledge and history.



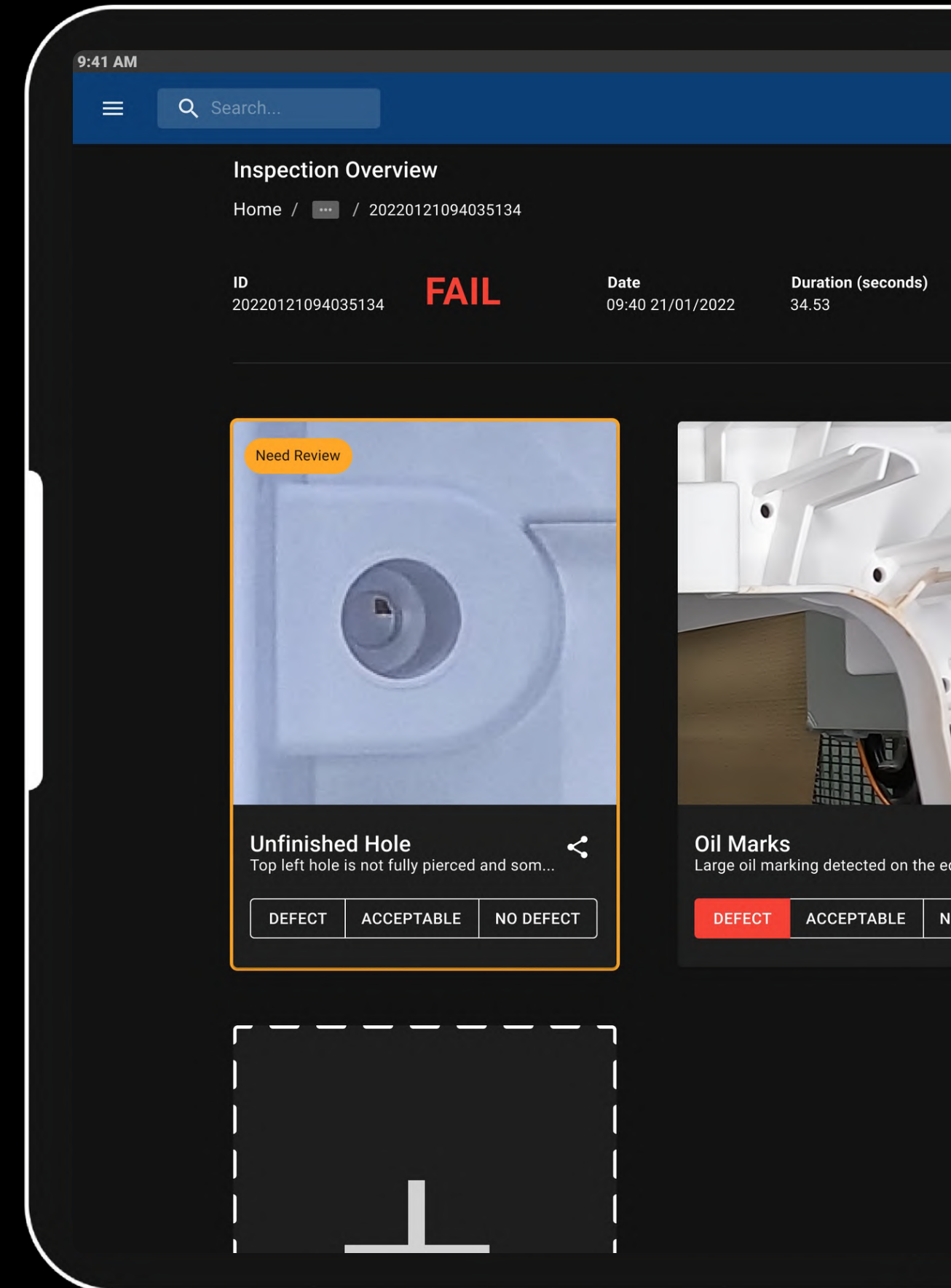
Standardization of the visual quality inspection results.



Collaboration of all the stakeholders in the quality processes.



Flexibility of the solution to adapt to various visual inspection tasks.



VU Engineering

Thank you



[linkedin.com/company/vuengineering](https://www.linkedin.com/company/vuengineering)

March 30, 2022

lucas.vandroux@vu.engineering

Pitch

« It will seem natural for the next generation to expect any system to demonstrate a better visual acuity than possible in humans – much the same way that we already expect a computer to calculate faster and more accurately than we do.»