

# Surface Inspection

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## Client

Our client is a German-based multinational engineering and technology company and was founded in the late 1800s. Our client set up their first manufacturing plant in India during the early 1950s. With a turnover of over \$3 billion in India and over 31,000 employees, they are spread across 10 locations and 7 application development centres.

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## Problem Faced

- Identification of defects on the samples.
- Manual visualization of the defects was done previously and the client wanted it automated.
- Distinguishing between good and bad variants.

## Technology introduced by Qualitas

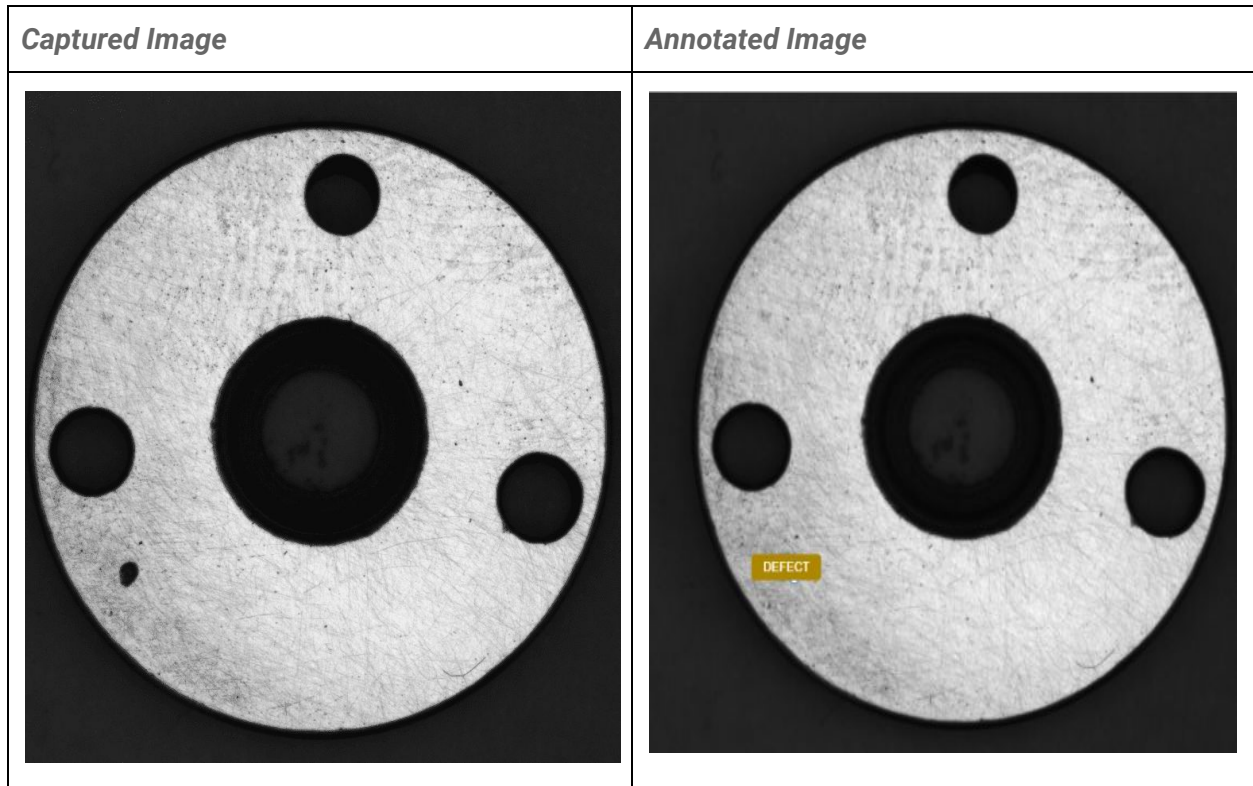
Deep Neural Network image processing helps in optimal decision making & precise results. The previously used conventional rule-based image processing was a time-consuming task and wasn't reliable when accuracy was asked for. This is how the previously used technology worked; the image processing was done by comparing captured images to a master image. During the comparison, any difference in captured image pattern above the pre-set threshold value resulted in rejection & images with pattern difference falling less than pre-set threshold value was accepted. But the issue here was with the accuracy and limitations of the application.

## Solution

- The disc was fed to the vision system conveyor (manual feeding).
  - Proximity type or through-beam laser sensor triggered the camera and captured top & bottom surface images (2D).
  - Both the images were processed & real-time results were displayed over Qualitas custom-built GUI and the defects were displayed with annotation.
  - Results (OK/NOT OK) from the top and bottom inspections actuated the flapper & components were separated accordingly. Rejected components with defects on both top & bottom surfaces, or only on one face were collected in the same bin.
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## Images



## Results

The proposed solution works for all variants.

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