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# Fundamentals of Ongoing Reliability Testing









Changes



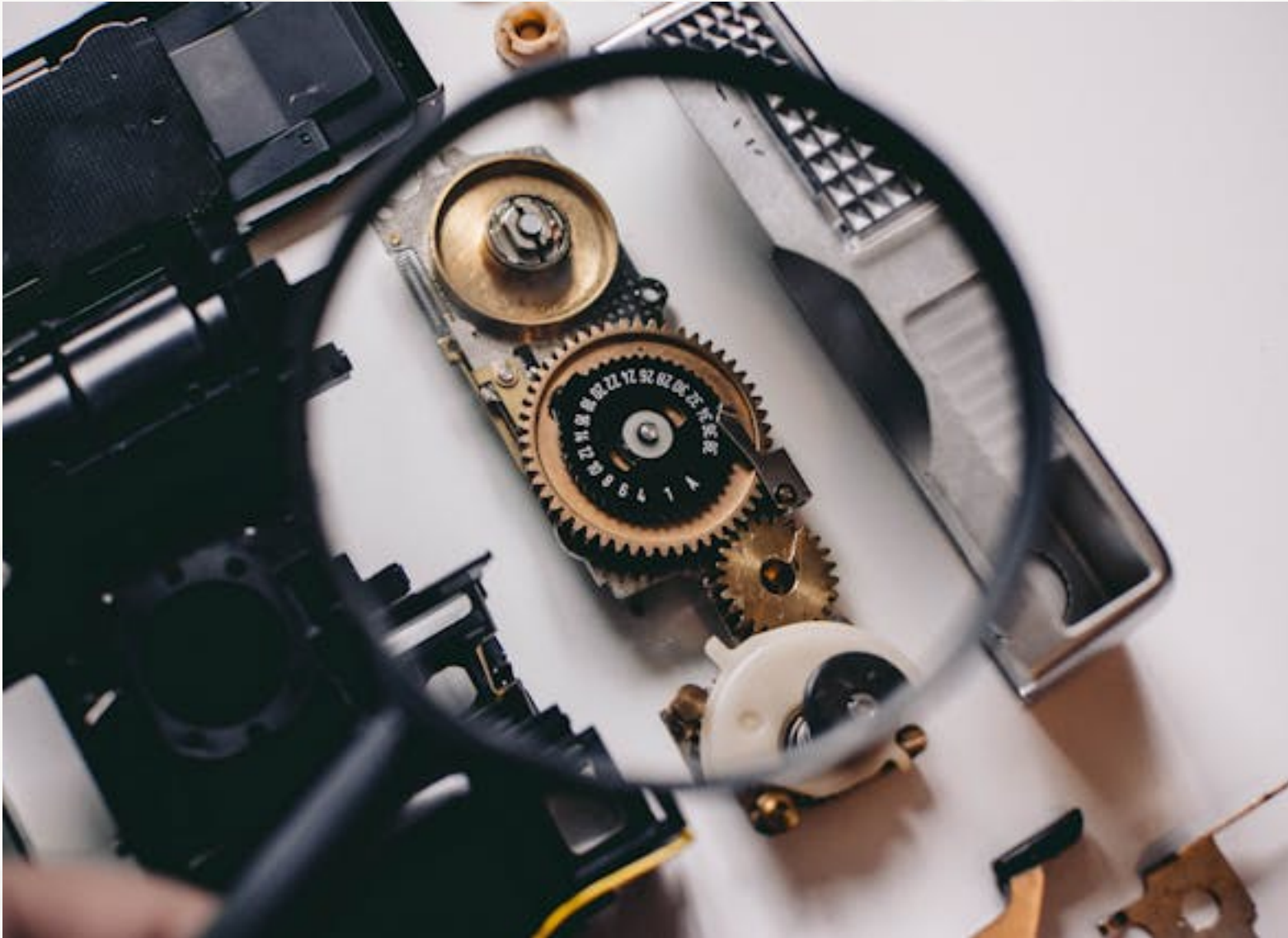
# Detection





What does  
your org do?







# Great Examples

Inkjet printers

6 week rotation

New sample each week

5 different use cases

Immediate root cause analysis and  
implementation of fixes

Identified the pick roller issue





# Good Examples

Custom system monitoring

Risk analysis-directed stresses

Focused on mfg'ing and assembly

Shifted to HASS once testing found  
fewer and fewer problems





# Ugly Examples

High-volume consumer product

The checklist said to create an ORT

The plan was to redo all  
development qualification testing  
each month

No results investigated

No action taken on faults found





**What influences**

**the test plan?**



# Considerations





# Risky Factors

## Considerations

DFMEA & PFMEA plus...

How did prototypes fail?

Which areas of the design have very little margin (least capability, CPk)

Engineering judgment





# Sampling & Sample Size Considerations

Many tradeoffs and constraints

detection capability

volume of production

risks or downside of field failures

exercise/stress capacity

Full product, module, component





# Economics

## Considerations

Cost of samples and testing

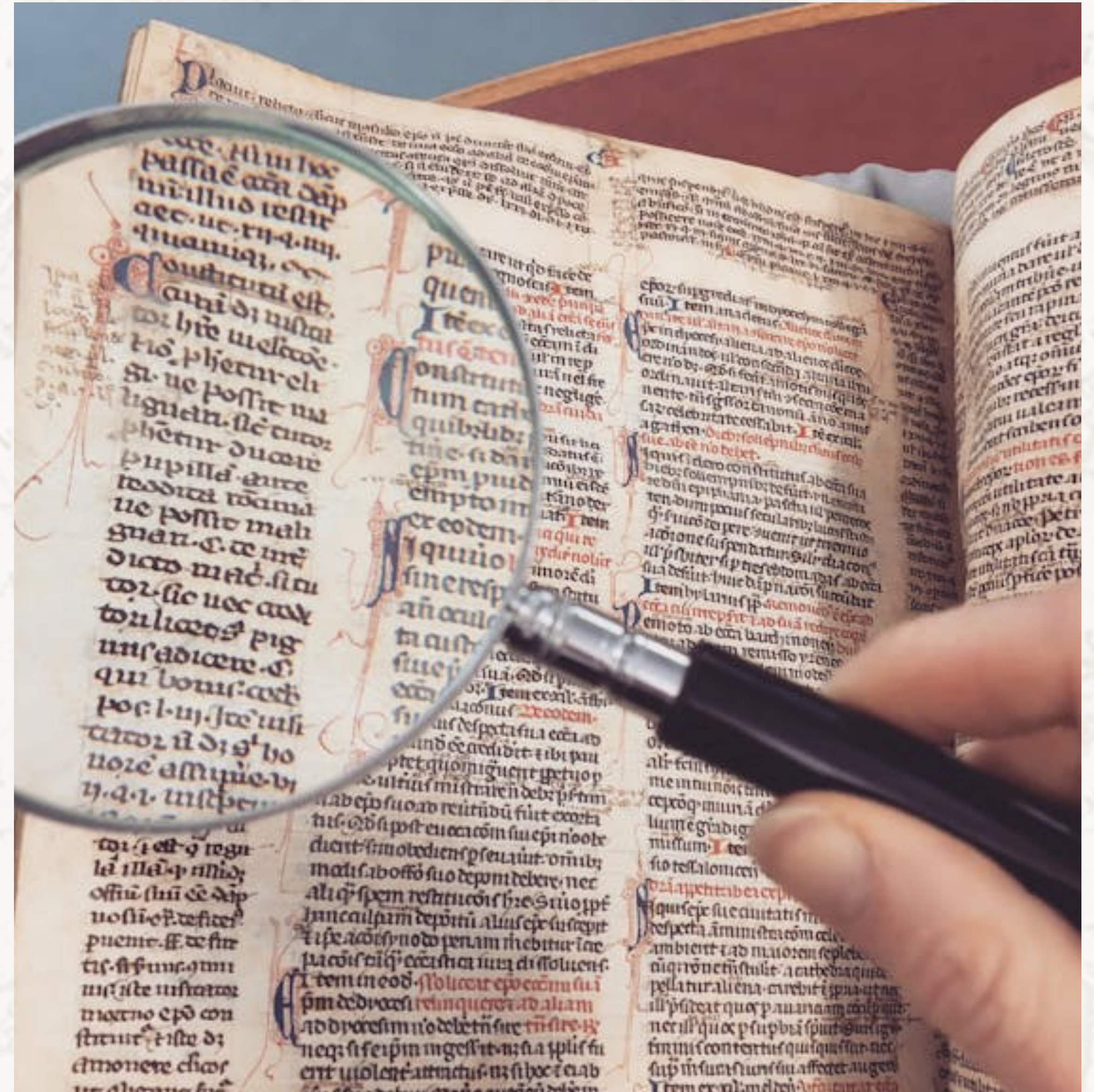
Cost of field failures

Lead time to enable fixes  
(image production shut down)

engineering

verification

implementation





# What makes ORT

valuable?



# Basic Process





# Risk Assessment

## Basic Process

What could go wrong?

What is likely to go wrong?

What is going wrong?

Check with

Design/development team

Production team

Key vendors





# Planning & Implementation

## Basic Process

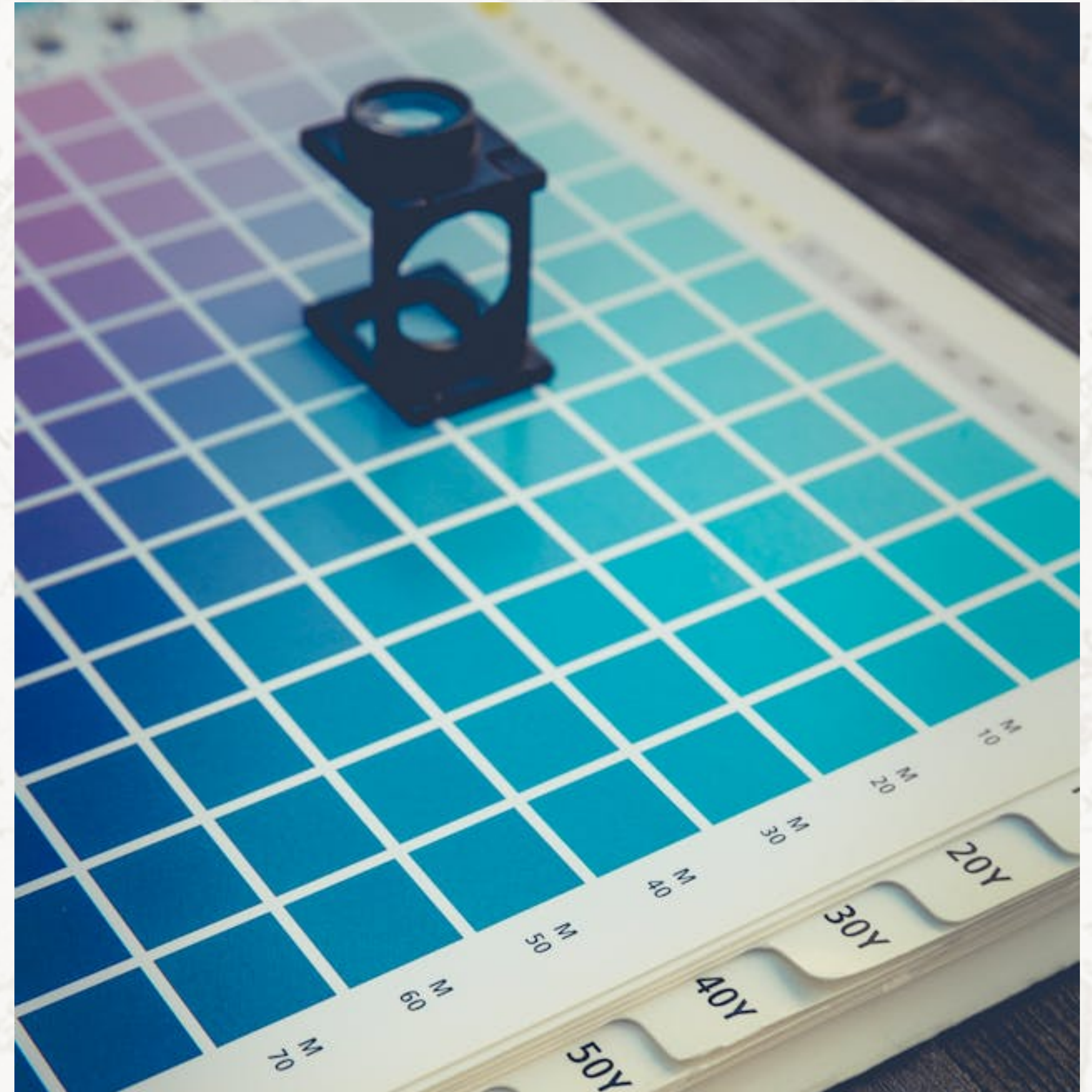
There are some formulas and statistics, yet many considerations

Stresses and detection monitoring

How small of an issue to find

Capacity, sampling, failure analysis

Decision points for isolation, production hold, and recall





# Failure Analysis & Action

## Basic Process

Work how and by whom will do the failure analysis work

Short term and long term solutions

Follow up – what worked

Monitor current field failures – why did your ORT not identify them

Have a plan to stop the ORT when no longer useful





**Will this work**

**in your organization?**



# Additional Comments and Questions



# Thanks

**see more at [AccendoReliability.com](https://AccendoReliability.com)**