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# Fundamentals of Metric Monitoring







Trends



# Decisions



What Reliability  
Metric(s) do You Use?







# Bad examples

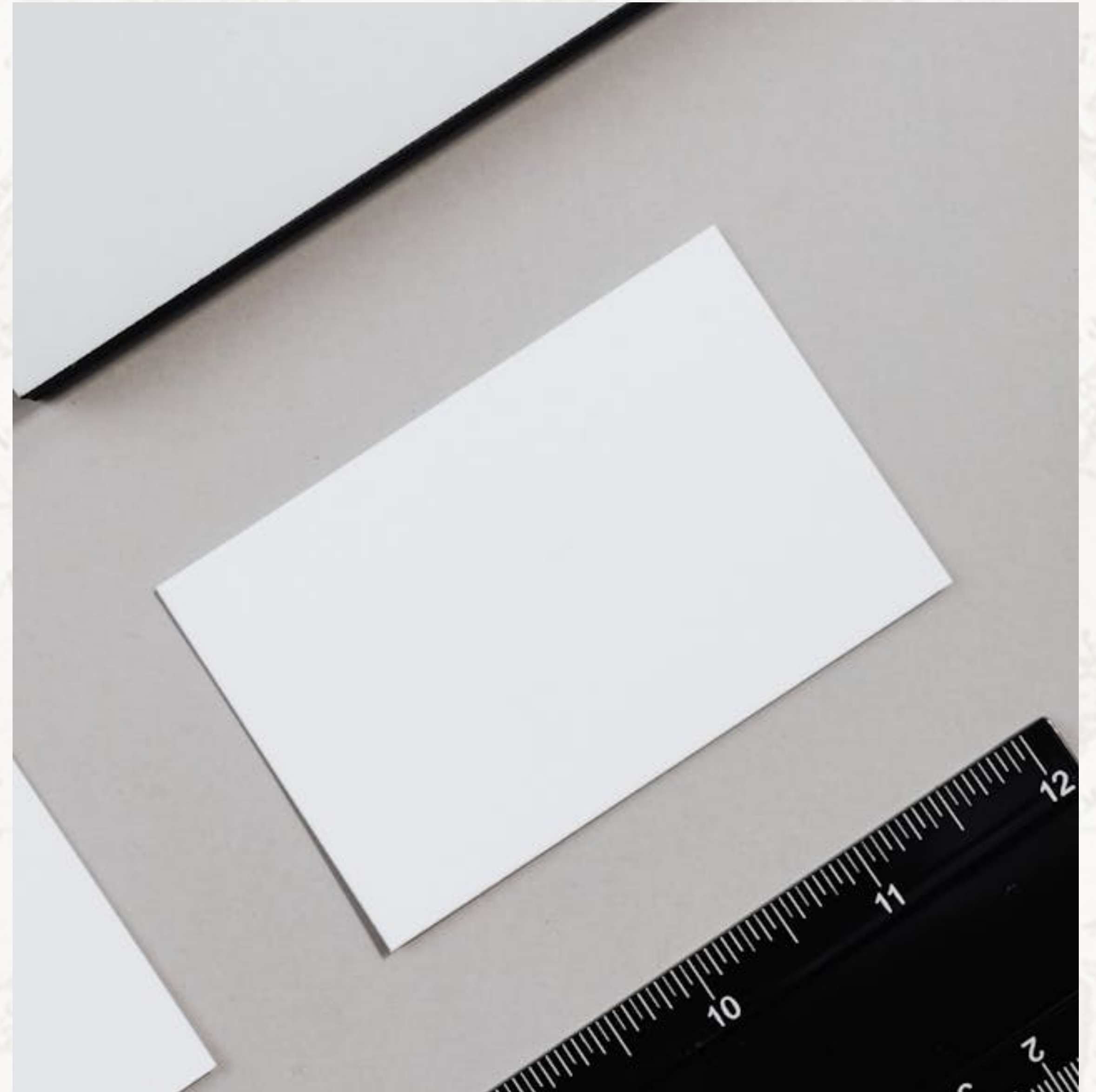
## Metrics

MTxx of any kind

Monthly returns divided by shipments

None - no measurements

Warranty expenses per month (only counting part costs, nothing else)





# Poor examples

## Metrics

Failure rate per week, month, year

FIT

Rolling averages





# Great Examples

## Metrics

Reliability or Availability

Reliability per week of manufacture

Heat maps Actual vs Expected by week

Comparisons





**What affects**

**trends?**



# Trends





# Stability is Rare

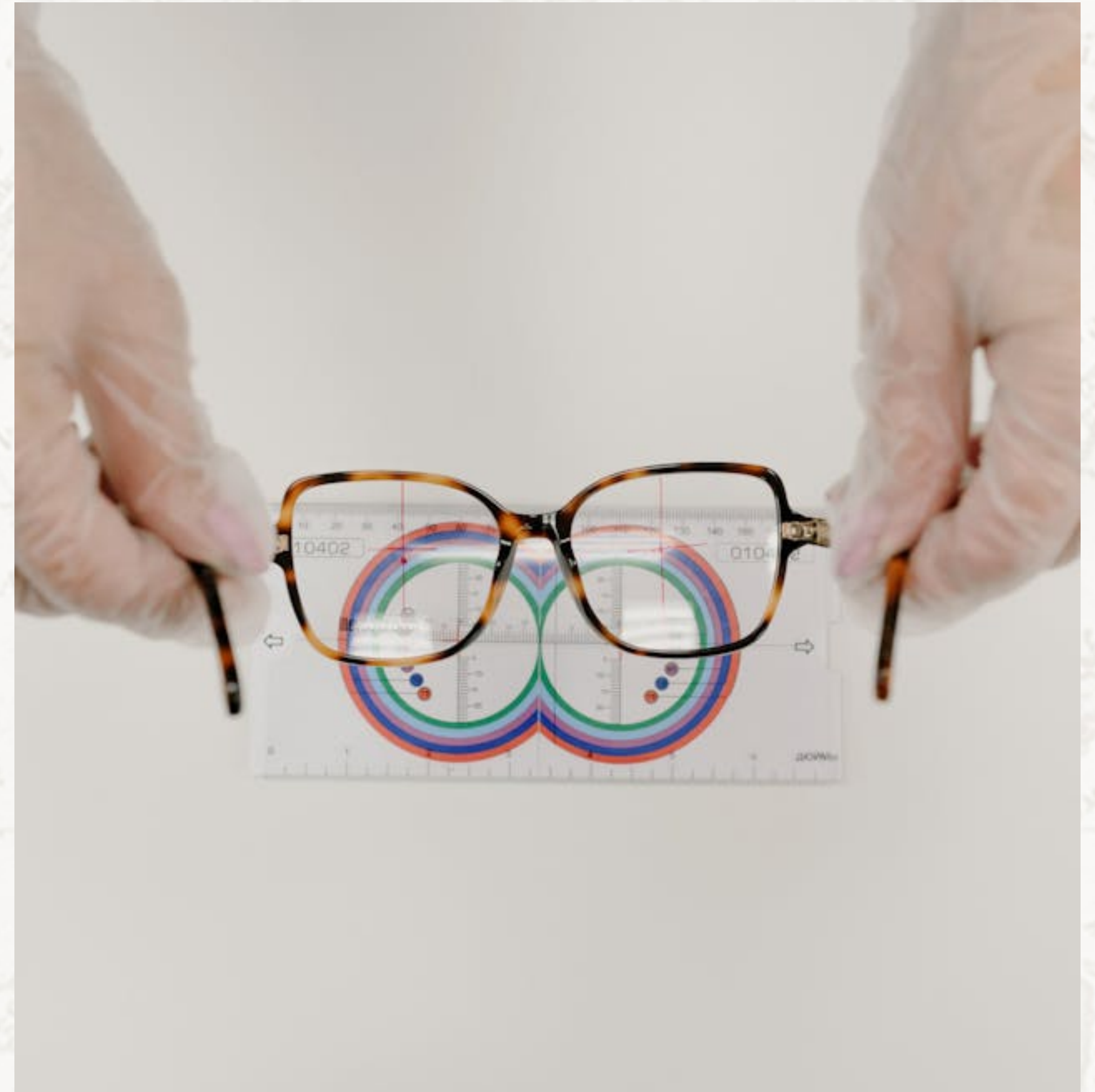
## Trends

Ramping up, Ramping down

Weekly and Monthly variation

Spikes due to promotions, etc.

Different customer use patterns





# Seasonality

## Trends

Use and environmental variation

Cyclic patterns





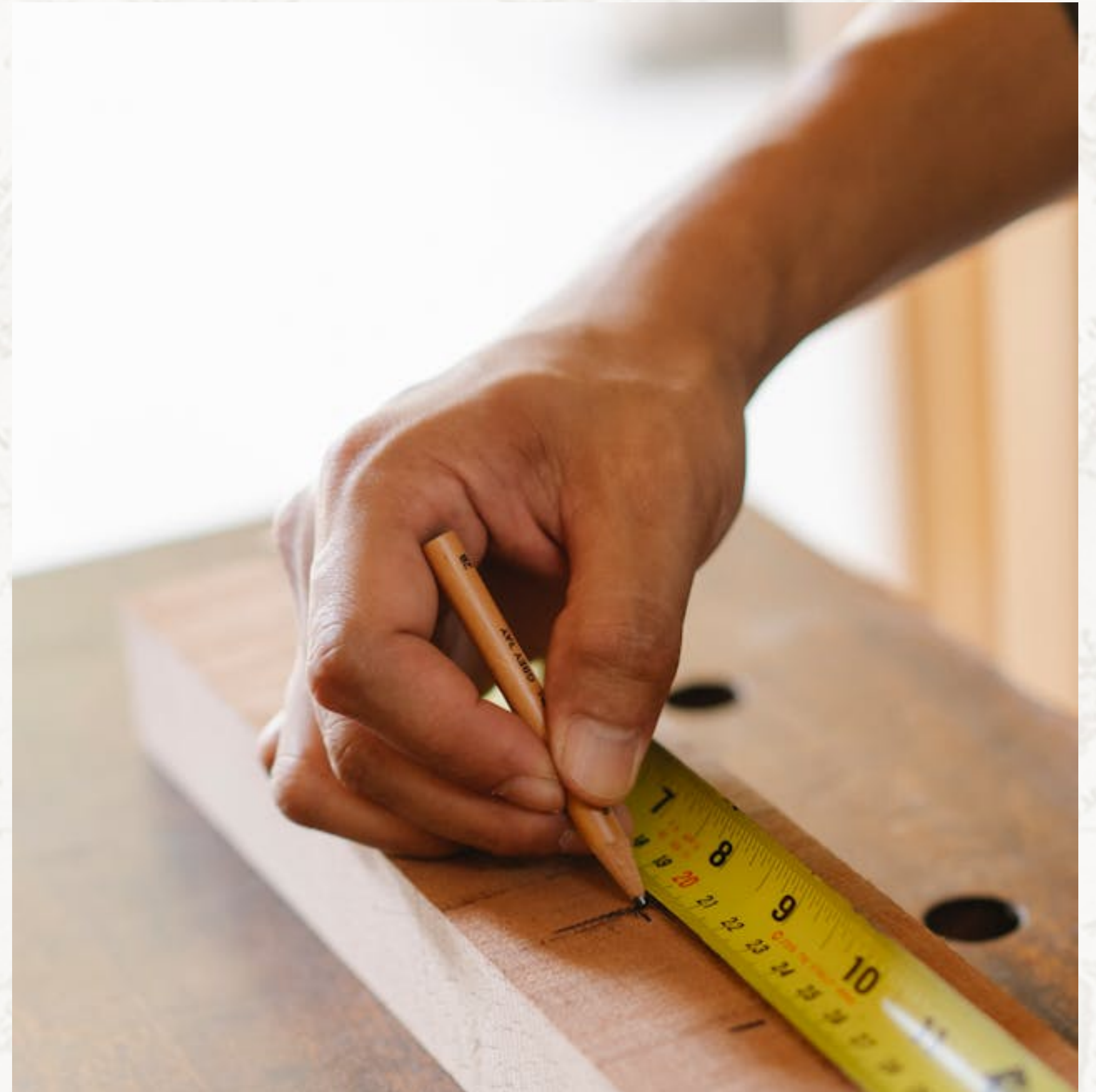
# Actual Changes

Trends

Design changes

Process changes

Supplier elements change





How to do you use

Metic Monitoring?

# Monitoring & Decisions





# Decision First

## Monitoring & Decisions

What is the metric and monitoring for? What decision(s) does it inform

Will the metric monitoring adequately inform the decision-makers?





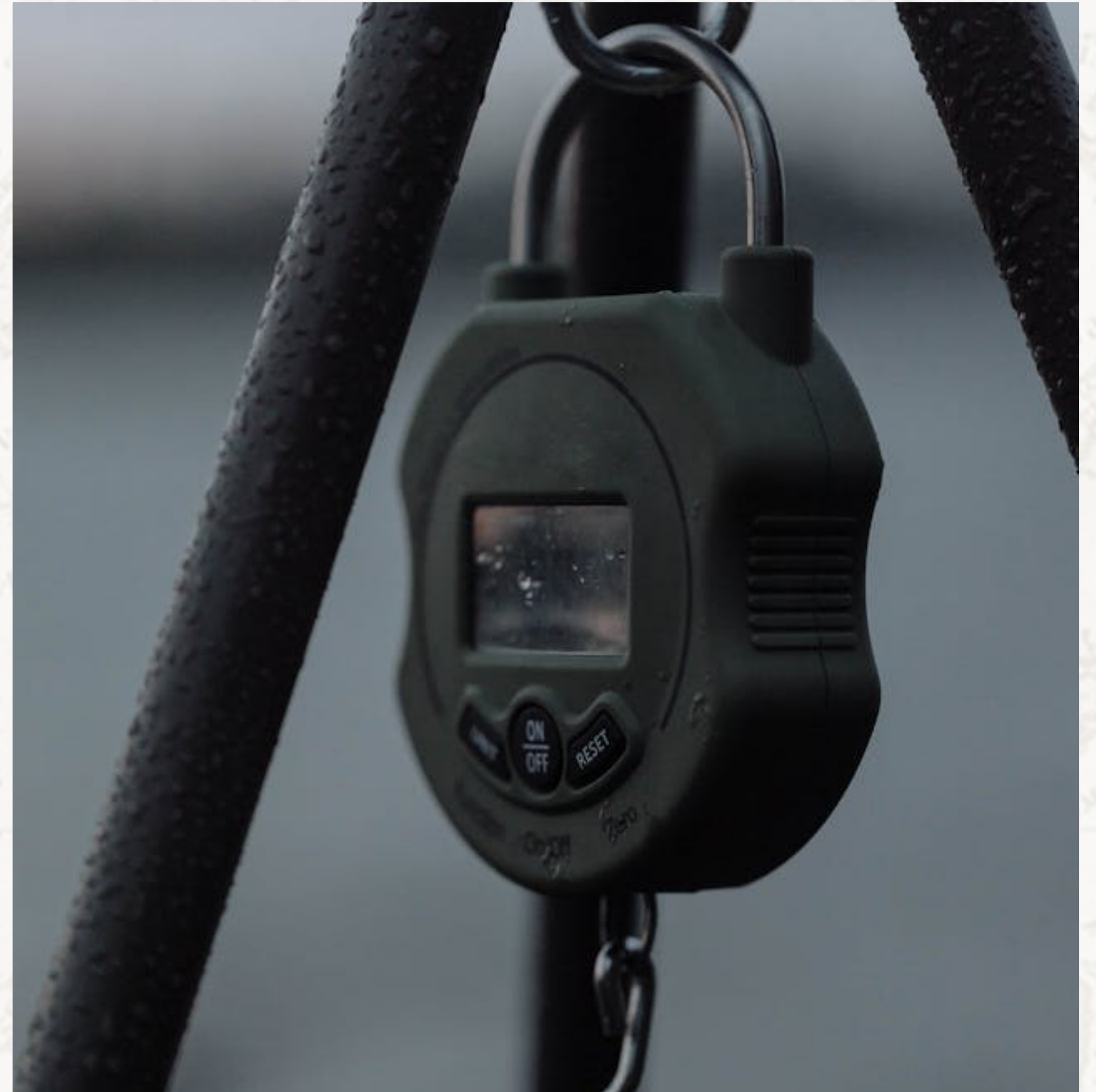
# Check for Artifacts

## Monitoring & Decisions

Metric collection and analysis can have artificial behavior as a result of how the measures happen

How does a spike, good or bad, appear in the monitoring?

Do you have limits to separate normal behavior from an opportunity?





# Plan to End Monitoring

## Monitoring & Decisions

Once decision(s) are made, stop measuring.

Document what signals the end of the metric's usefulness.

Document the value, if any, the metric monitoring created.



**Is monitoring working**

**in your organization?**



# Additional Comments and Questions



# Thanks

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