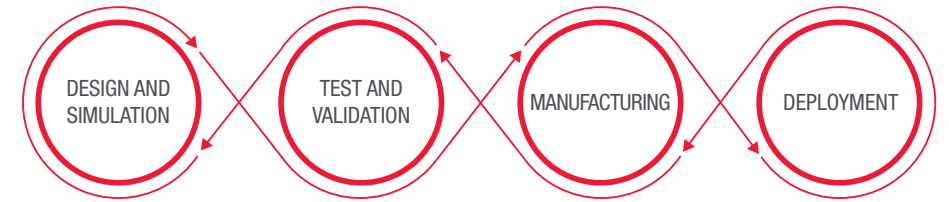


# Manage Risk



Apply the science of measurement (metrology) to improve product quality across your life cycle.



## What?

Measurement decision risk matters.

When you perform a measurement and make pass and fail decisions for shipping products or rejecting products, there are two possible outcomes:

- ✓ You are correct.
- ✗ You are incorrect.

Each measurement result has an associated measurement uncertainty (MU), and that uncertainty can affect the probability of being correct or incorrect. This is your *measurement decision risk* — the risk that accompanies decisions made based on measurement results.

The more you understand your uncertainty and drive down risk, the more confident you can be in your decisions.

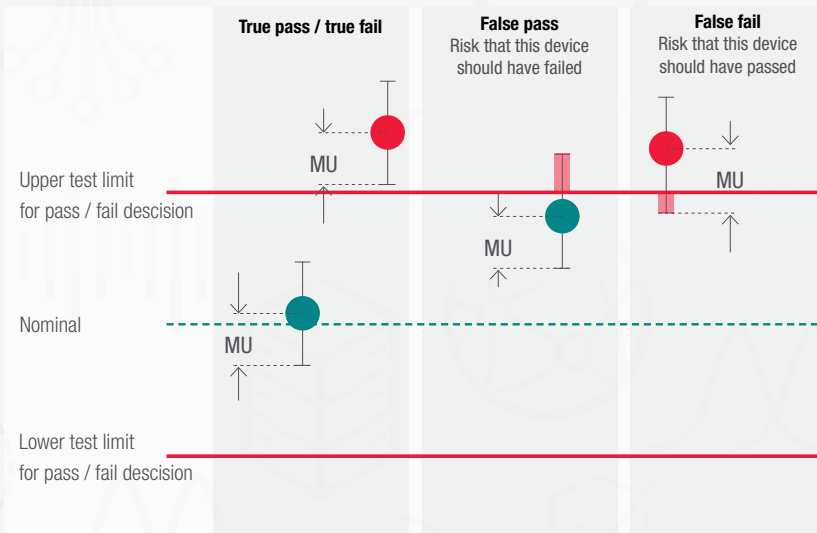


Figure 1. Confidence of your pass / fail decisions based on MU

## Why care?

You want to make correct pass / fail decisions.

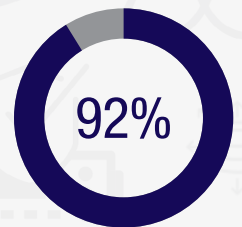
Follow measurement decision risk rules to reduce your risk. Regardless of the decision rule applied, the lower the MU, the lower the false passes and false fails.

Check your calibration measurement report to help reengineer your MU:

- Ensure your calibration delivers the precision you need for your level of risk, such as MU and guardbanding for all warranted specifications.
- Check that the calibration date is within the manufacturer’s recommended interval.
- View the list of instruments used to calibrate your equipment for these reasons:
  - Older instruments increase MUs.
  - Missing instruments can mean critical parameter tests were not performed. For example, if your spectrum analyzer calibration report lists only one signal generator, then third-order intermodulation disorder was not measured.
  - As-received and as-shipped results provide the data needed for the measurement parameters you are counting on.

**Decision rule** “describes how measurement uncertainty is accounted for when stating conformity with a specified requirement.”<sup>1</sup>

Ninety-two percent of companies suffered a recall, rejected product, increased returns, or lost yield from out-of-calibration test equipment. Calibration is key to test equipment accuracy and repeatability.



<sup>1</sup> ISO / IEC 17025:2017. Clause 3.7.