

# MEASUREMENT SYSTEMS ANAYSIS (MSA)

## OVERVIEW

An experimental and mathematical method of determining how much the variation within the measurement process contributes to overall process variability is the Measurement System Analysis (MSA). There are five parameters to investigate in an MSA: bias, linearity, stability, repeatability and reproducibility.

## COURSE OUTLINE

- Introduction and definition
- Understanding accuracy and precision in MSA
- Application of resolution and NDC
- GR&R study
- Anovas method of gauge R & R
- Nested and crossed mehtod

## OBJECTIVE

- Understand the need for Measurement System Analysis.
- Identify the type of variations available in the Process.
- Making process work for us
- A practical approach for measuring the variation due to Measurement system
- Easy monitoring by anyone
- Common Language to understand the process
- Stabilization of the process
- Active improvement efforts on the process itself
- Collective Knowledge Enhancement
- Appraise the company's measurement & calibration systems
- Develop an in-house cost effective measurement & calibration program
- Statistically extend or reduce calibration frequencies of equipment to maximize program effectiveness
- Fulfilling all requirements of ISO9001:2015 and/or IATF16949:2016 standards especially on the part of Gage Repeatability & Reproducibility Study (GR&R)
- Initiating measurement & calibration cost down programs



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