

Gauge Performance Curve

MARK S. RUSCO ASQ PRESENTATION
SEPTEMBER 11, 2014

Introduction

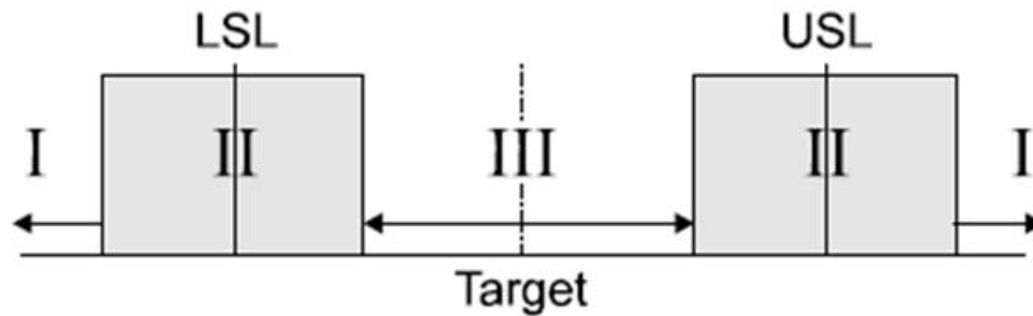
Why do we make graphs?

Do $\%GRR_{TV}$ and $\%GRR_{Tot Tol}$ adequately describe the performance of the gauge?

How do we define the areas of risk that surround the specification limits?

The Grey Areas

From the MSA on page 20

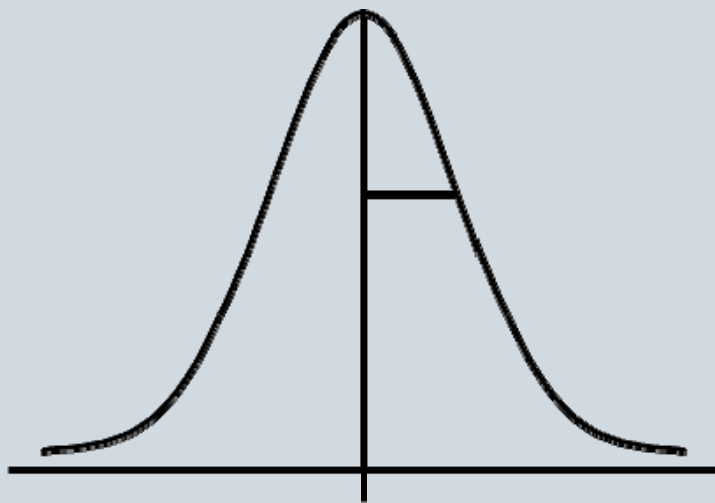


where:

- I Bad parts will always be called bad
- II Potential wrong decision can be made
- III Good parts will always be called good

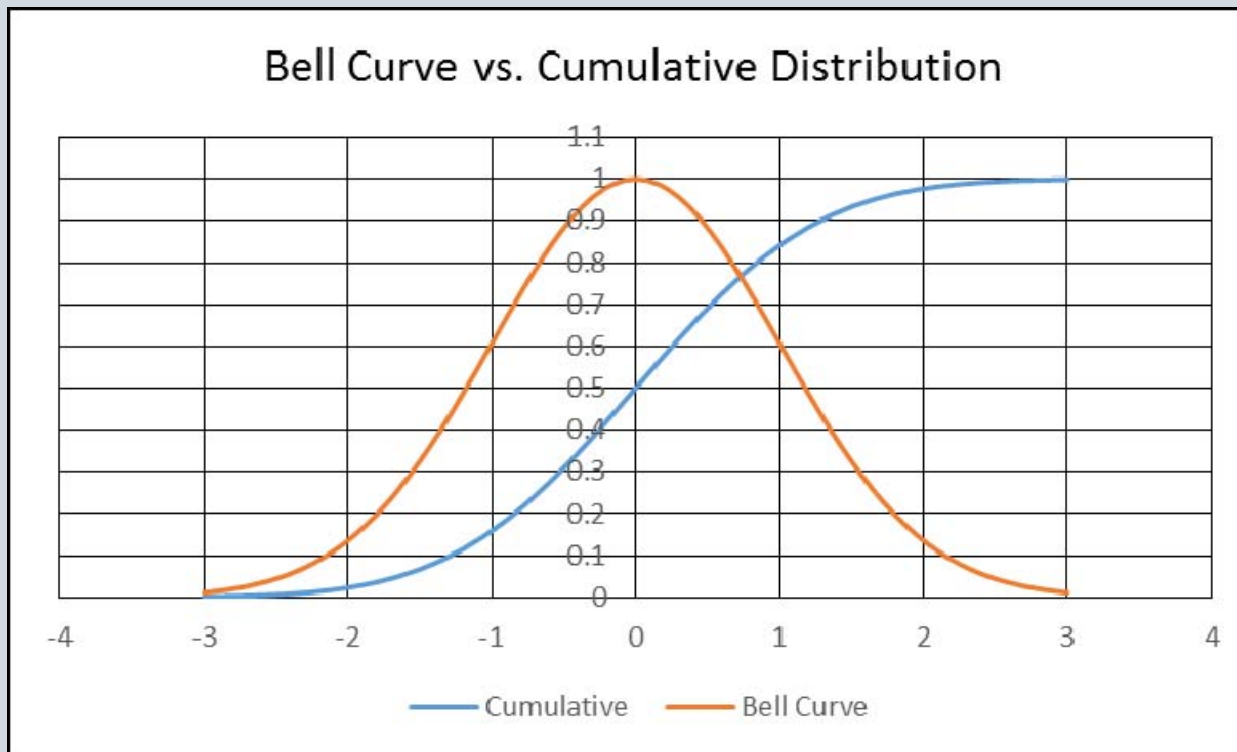
Stats Review

Mean and Standard Deviation

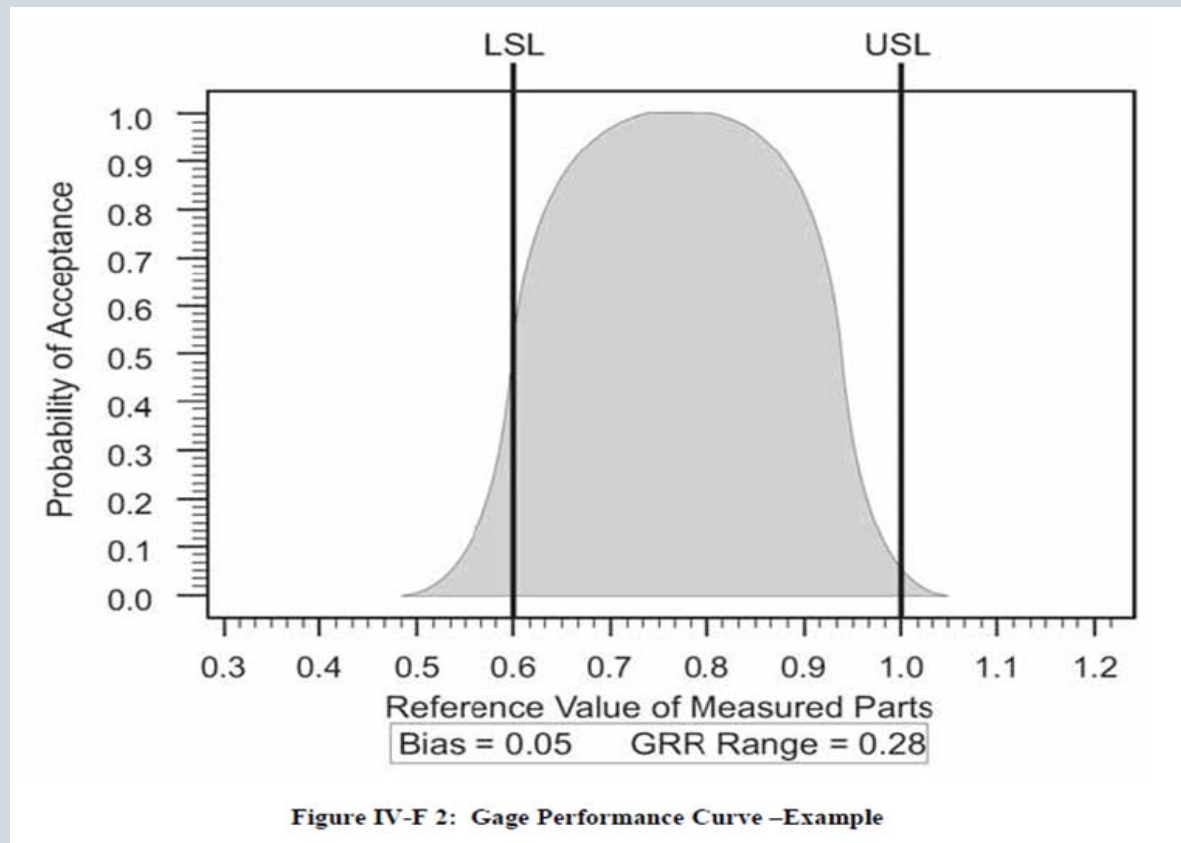


Stats Review

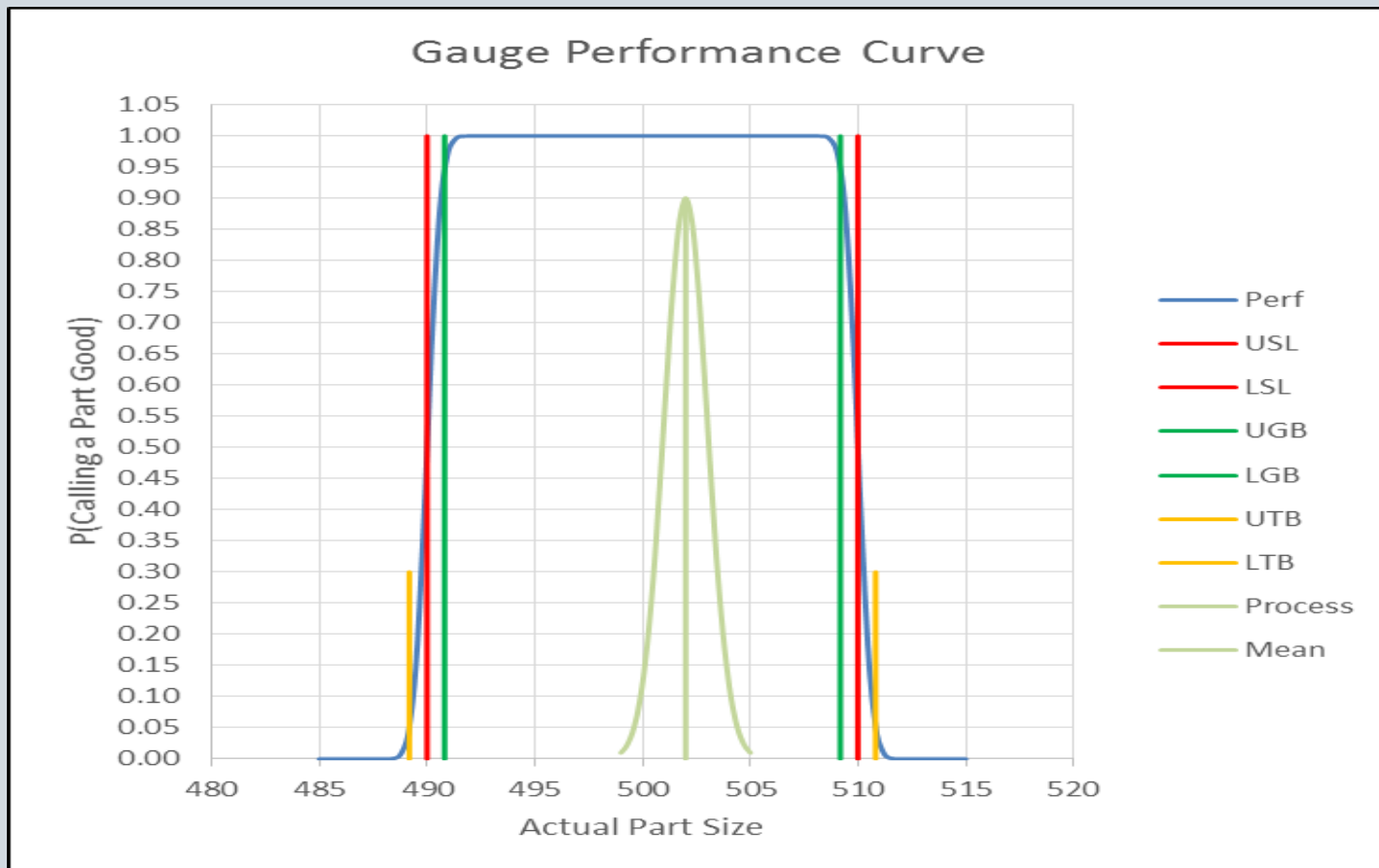
Bell Curve vs. Cumulative Normal Distribution



MSA Gauge Performance Curve

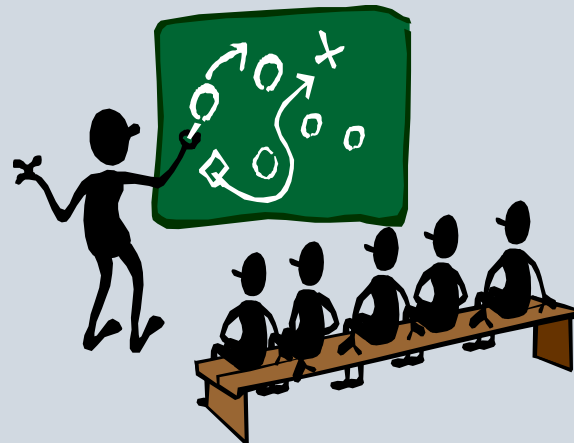


My Gauge Performance Curve



Link to Working Example

[Working Example.xlsx](#)



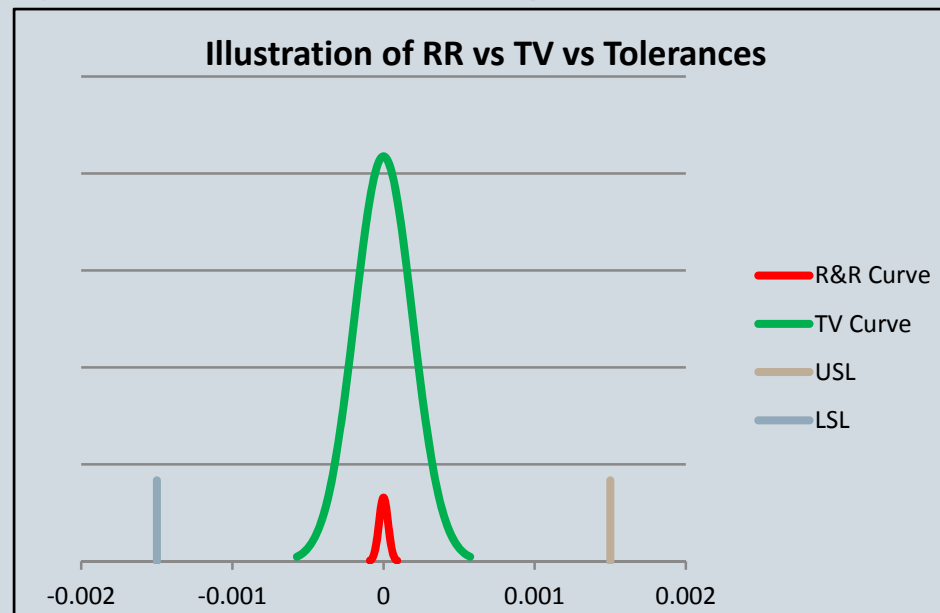
Actual Example 1

Example: [Blade Mic](#)

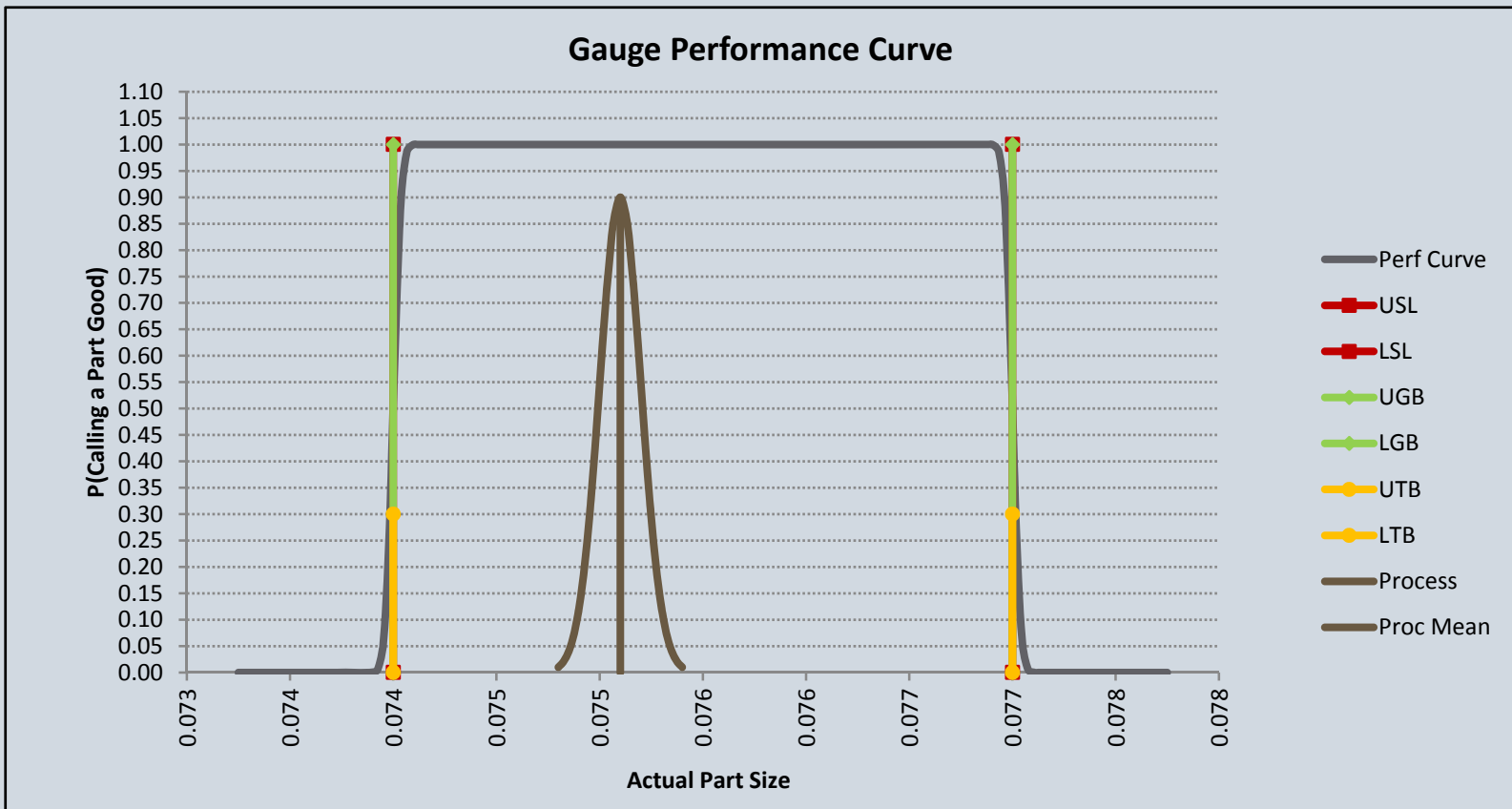
%GRR-tv = 15.7%

%GRR-tol = 6.0%

Very tight process, excellent Gauge Performance Curve



Actual Example 1



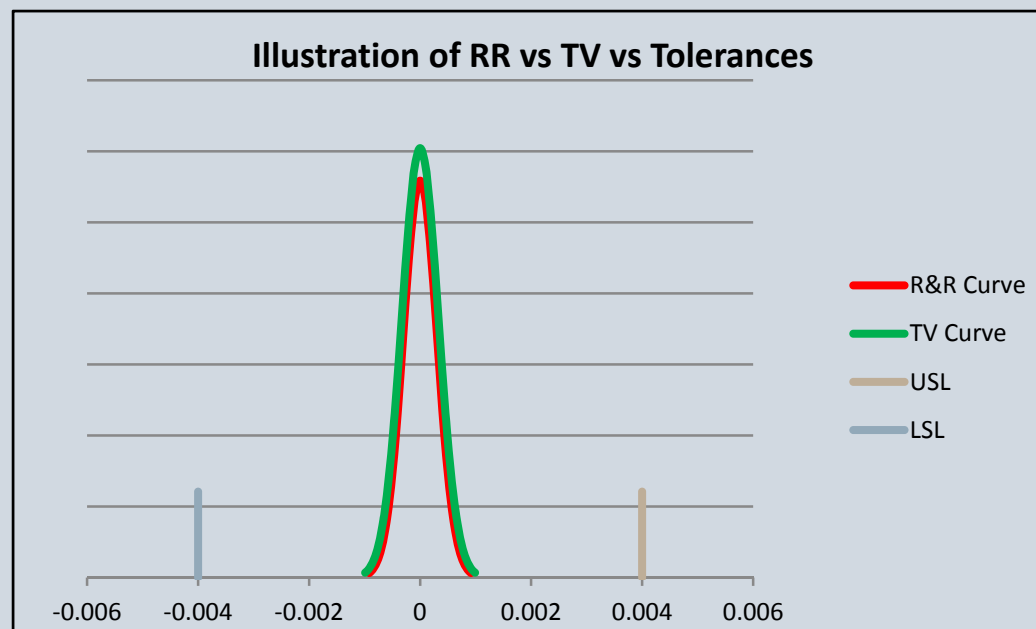
Actual Example 2

Example: 6" Caliper

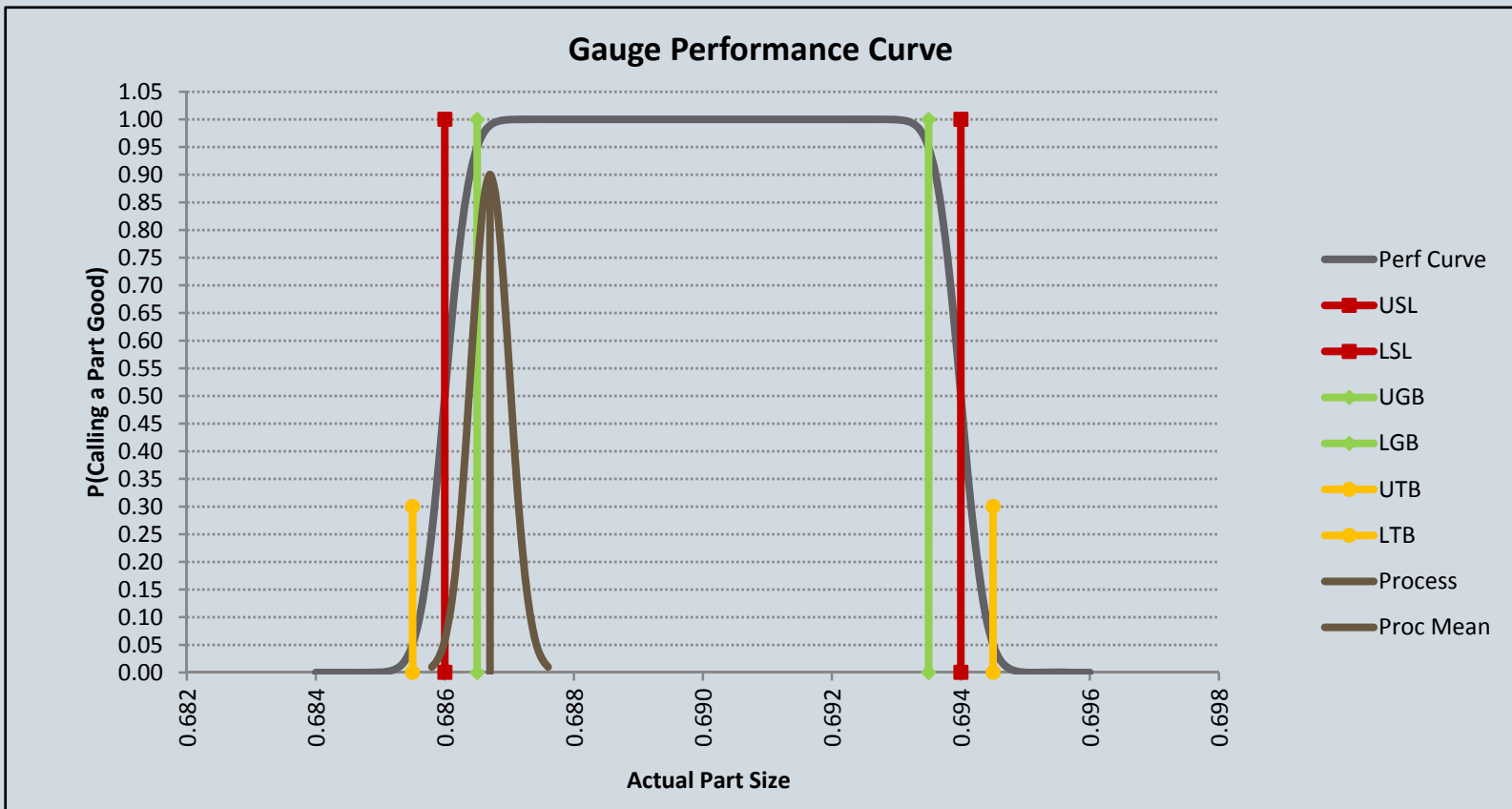
%GRR-tv = 92.4%

%GRR-tol = 22.9%

Process shifted to LSL, average Gauge Performance Curve



Actual Example 2



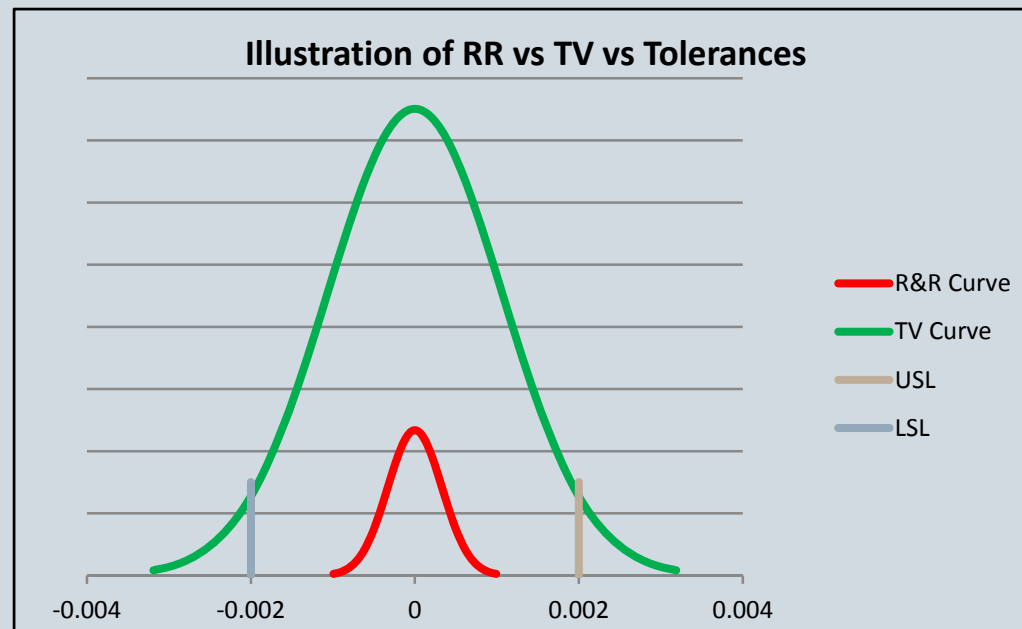
Actual Example 3

Example: 0-1" Digital Mic

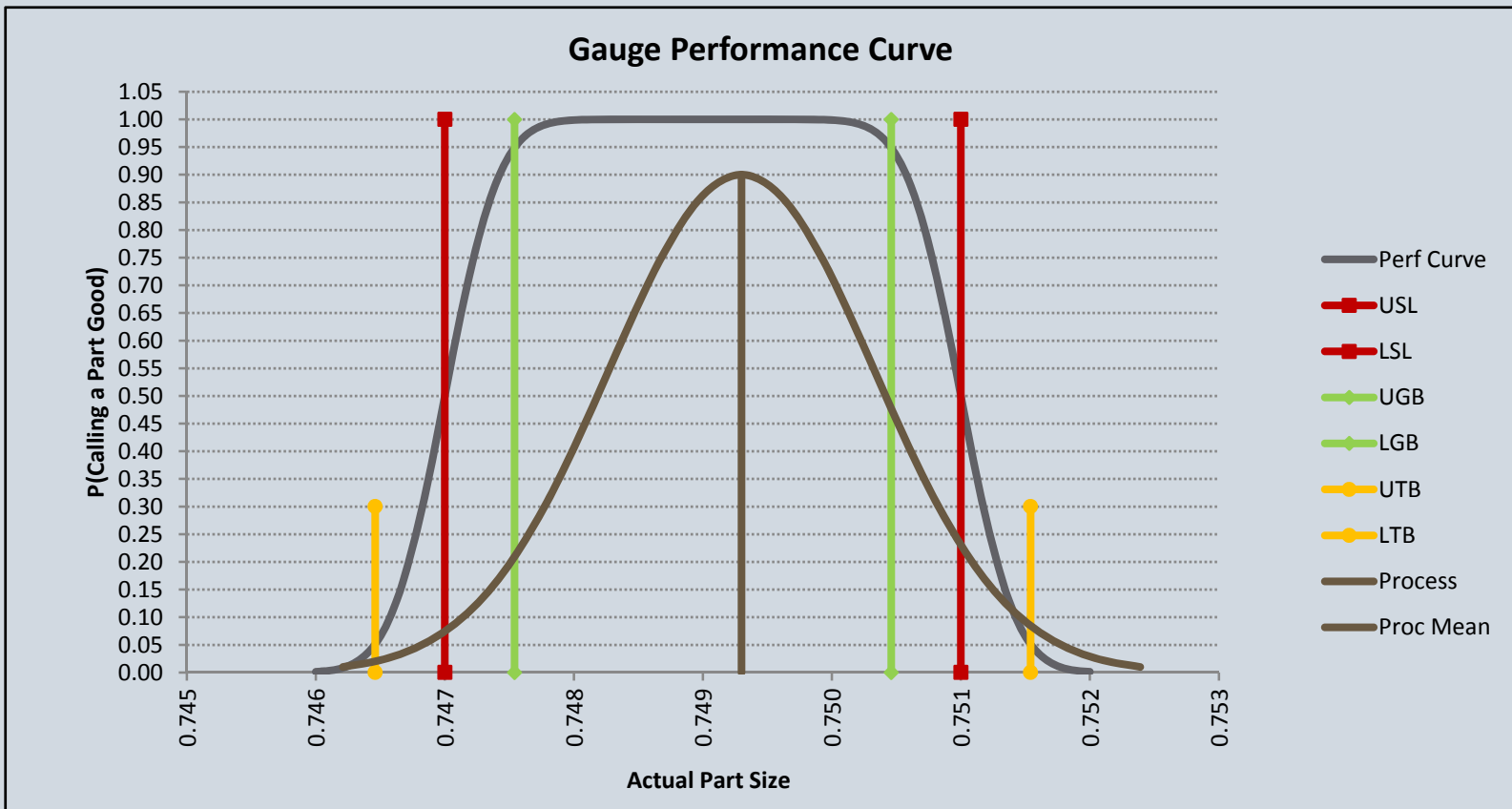
%GRR-tv = 31.3%

%GRR-tol = 49.6%

Very wide process, very poor Gauge Performance Curve



Actual Example 3



Wow, that went fast!

Thanks to our hosts, ASQ – Grand Rapids

Thanks to each of you for coming out.

Any other business?

