

# ASQ Reliability Division Webinar Series



## TOLERANCE ANALYSIS

Thursday, September 9, 2010

**DESCRIPTION:** There are many problems associated with tolerances that can be solved by the application of Monte Carlo Simulation techniques. Other common methods for evaluating statistical tolerances are Taylor series approximation, experimental design techniques attributed to G. Taguchi. The method described herein is a simplified expansion of Taguchi 3 level factorial experiment, which takes each component center, high and low level, together with other components at their 3 levels. (A full factorial design). The method is illustrated and it will serve as an Excel template for 2, 3, 4 and 5 components. To achieve the objective of error propagation, the examples provided herein are limited to statistically normally distributed independent random variables.

**PRESENTER:** Norbert S. Jagodzinski is an Adjunct Professor at the Rochester Institute of Technology, RIT, and as a commercial pilot, he is the owner and operator of Jag's Aerial Photographic Services.

His career spanned 50 years in the field of Reliability in research and design at the Bell Aero Systems, Sylvania Electronics, and Eastman Kodak Company. As an adjunct professor at RIT, since 1977, he has designed and implemented both graduate and undergraduate Reliability courses aimed at management, engineering, maintenance technicians and operators. He has presented numerous Reliability papers and conducted seminars domestically and internationally. He has written and provided Reliability software programs to the scientific community and to technical advisors to presidents Gerald Ford & Jimmy Carter. As an expert Reliability witness, he resolved contentious issues that supported the client. He holds an MS in Industrial Engineering with a major in Operations Research, from the University of Buffalo.

Also, he has written & copyrighted software: "Aerial Mapping from a Light Aircraft". He has successfully contracted with federal, state, county and local government officials to conduct aerial photographic surveys of state & federal highways, psychiatric centers, state penitentiaries and other major construction sites.