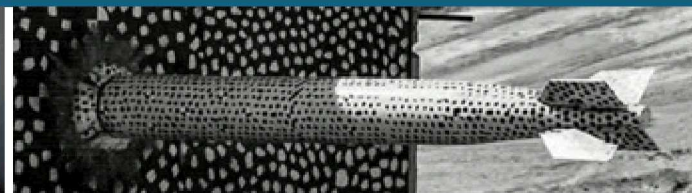
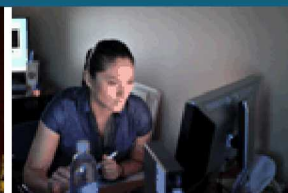


Measurement Technology Subgroup Round Robin Gage Update - Spring 2019 - AWE



PRESENTED BY

Robert Jones



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- Status of the Gage
 - Goals
 - Sites that have performed measurements or are in-progress
 - Sites remaining that have agreed to participate
 - Sites not listed that would like to participate
- Simulated data package and comparison
- Questions?

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- Our desired outcome is to
 - Collect sufficient data from each site to make comparison between
 - Various CMM's used
 - Measurement strategies
 - Data evaluations to ASME Y14.5
 - What the native CMM software used is reporting
 - How the native CMM is reporting for the features of interest
 - Attempt to compare the results in a blind comparison.
 - Compare sites results using a common software

In the following slides are examples of our requested information pertaining to the measurement of the gage.

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Several sites have already measured the gage and have returned data packages.

Already contributed

Lawrence Livermore National Laboratories

Sandia National Laboratories Livermore

Sandia National Laboratories Albuquerque

Mechanical Calibration

Manufacturing Liaison

Mission Support and Test Service, Nevada

The gage is currently being measured at

Los Alamos National Laboratory

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Several sites are still waiting to measure the gage

Kansas City National Security Campus

Y-12 National Security Complex

Savannah River National Labs

Atomic Weapons Enterprise

Other potential Candidates? If so please let me, or Tony Bryce know.

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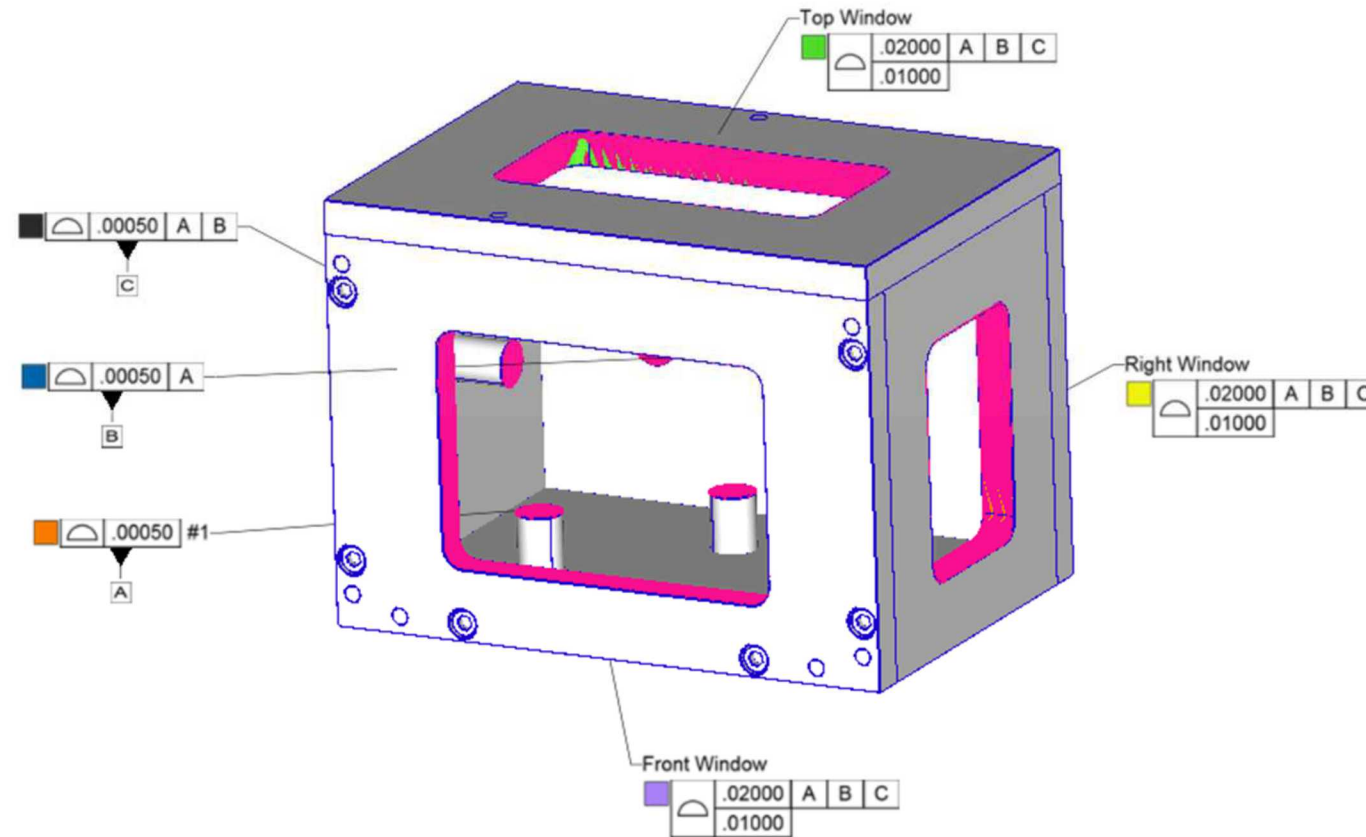
- Report methodology per participant site's normal process
- Contact information for delivery of Round Robin gage
- Would like to receive from each participant if possible the following information-
 - X, Y, Z, i, j, k measured points (i.e. surface point data)
 - Measured surface points of all datums along with profile measurements
 - Follow participant's site process to provide information (e.g. E-mail, CD file transfer)
- Units of measure of the data
- Effective probe tip diameter
- Software (e.g. name and version) being used on CMM actual profile measurement value result
- Certified CMM specification or accuracy

DIMENSION	DESCRIPTION	ON CMM AS MEASURED	UNIT OF MEASURE	EFFECTIVE PROBE DIAMETER & MATERIAL	BALL CENTER or SURFACE POINTS	SCAN POINTS or SINGLE POINTS	MACHINE MODEL and SOFTWARE	CMM Specification	METROLOGIST/ FACILITY	UNITS OF EXPORTED POINTS
1	Profile Datum A	.00040	INCH	3mm / Ruby	Surface	Scan	Zeiss CMM Prismo 10Ultra Calypso	MPE = $\pm 0.5 \mu\text{m} + (L/500) \mu\text{m}$	Margie Baca/SNL-NM	Metric
2	Profile Datum B	.00126	INCH	3mm / Ruby	Surface	Scan				
3	Profile Datum C	.00054	INCH	3mm / Ruby	Surface	Scan				
4	Composite Profile Top Window	-.00300	INCH	3mm / Silicon Nitride	Surface	Scan				
		.00500	INCH	3mm / Silicon Nitride	Surface	Scan				
		.00836	INCH	3mm / Silicon Nitride	Surface	Scan				
5	Composite Profile Right Window	-.00830	INCH	3mm / Silicon Nitride	Surface	Scan				
		.00863	INCH	3mm / Silicon Nitride	Surface	Scan				
		.00721	INCH	3mm / Silicon Nitride	Surface	Scan				
6	Composite Profile Front Window	.00630	INCH	3mm / Silicon Nitride	Surface	Scan				
		.00830	INCH	3mm / Silicon Nitride	Surface	Scan				
		.00960	INCH	3mm / Silicon Nitride	Surface	Scan				

Please send all the point files for all the datums along with all the window features and include the units of the exported points. Please also include the stylus size diameter and if the exported points are surface or ball center data.

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In an additional exercise we use a third-party software (i.e. Smart Profile) to determine the results of these data sets in compliance with the Y14.5M-1994.



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Questions?