



# MOTOR SUMMIT 2014

NVLAP motor energy efficiency  
testing – experience with  
accreditation and performance  
Tim Rasinski – program manager



# NVLAP

- National Voluntary Laboratory Accreditation Program
- Established in 1976 (CFR, Title 15, Part 285)
- 800 labs in 19 programs



# My Role at NVLAP

## Program Manager

- Manage requirements for specific technologies – motors, lighting, carpet, thermal insulation, wood products, fasteners
- Monitor laboratories and assessors, and coordinate assessment



# Energy Efficient Motors Program

The EEM program was established in 1992 at the request of the National Electrical Manufacturers Association (NEMA) to assist the electric motor industry in complying with the statutory requirements for electric motors in Section 431.36(a) of Title 10, Code of Federal Regulations (CFR) Part 431 (10 CFR Part 431).



## Test Methods

- IEEE 112 Test Procedure for Polyphase Induction Motors and Generators (CSA C390)
- IEEE 114 Test Procedure for Single-Phase Induction Motors (CSA C747) since 2013



# Certification VS Testing



# Certification

Third-party attestation related to products, processes, systems or persons

ISO/IEC 17000-04 *Conformity assessment — Vocabulary and general principles* used for all definitions



# Certification Bodies

- 1<sup>st</sup> Party – manufacturer
- 2<sup>nd</sup> Party – interest in product
- 3<sup>rd</sup> Party – independent of manufacturer and product





# Management Systems for Certification Bodies

*ISO/IEC 17065:2012 - Conformity  
assessment - Requirements for bodies  
certifying products, processes and  
services*



# Testing

Determination of one or more characteristics of an object of conformity assessment, according to a procedure



# Testing Bodies

aka

## Laboratories

- 1<sup>st</sup> Party – manufacturer
- 2<sup>nd</sup> Party – interest in product
- 3<sup>rd</sup> Party – independent of manufacturer and product



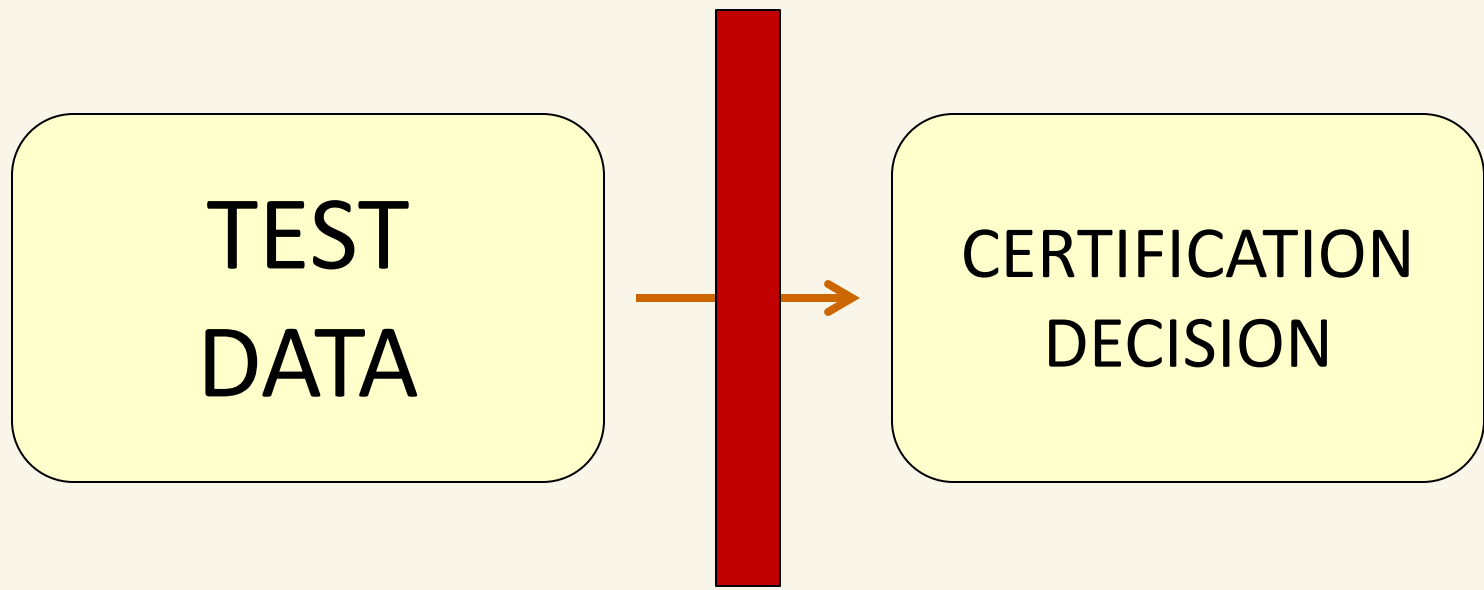
# Management Systems for Laboratories

*ISO/IEC 17025:2005 - General  
requirements for the competence of  
testing and calibration laboratories*



# Testing and Certification

Testing provides empirical data for certification.





# Accreditation

Third-party attestation related to a conformity assessment body conveying formal demonstration of its competence to carry out specific conformity assessment tasks

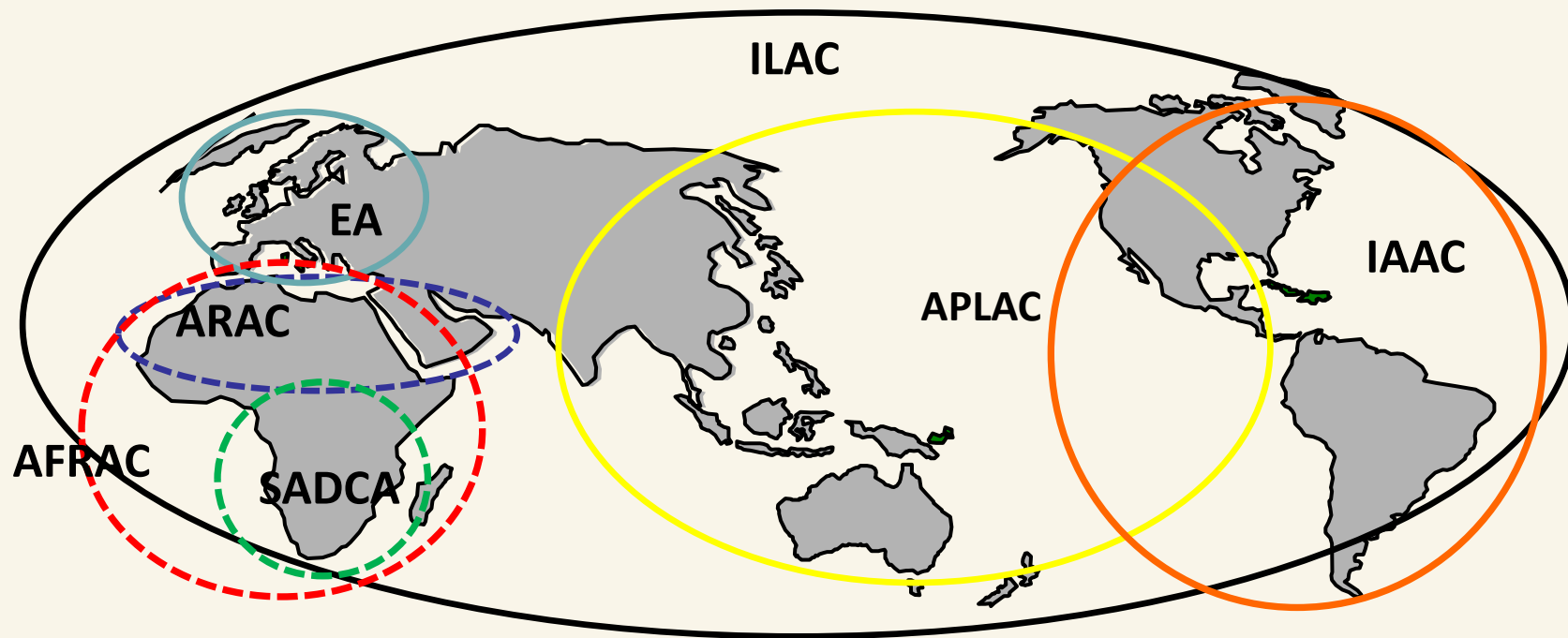


# Accreditation Programs

- Laboratories – ILAC (International Laboratory Accreditation Cooperation)  
NVLAP, A2LA, IAS, ACLASS, LAB, PJLA
- Certification Bodies – IAF (International Accreditation Forum)  
ANSI, A2LA, IAS



# ILAC and Regional Accreditation Cooperations







# NVLAP Motor Laboratories

- Baldor Motor Design Lab, Fort Smith, AR [200537- 0]
- Advanced Energy, Industrial Energy Laboratory, Raleigh, NC [200081- 0]
- Regal Beloit America, Tipp City, OH [200053- 0]
- Toshiba/Houston Test Laboratory, Houston, TX [200088- 0]
- Regal Beloit Corporation - Wausau Engineering Lab, Wausau, WI [200134- 0]
- CQST/CNEX Efficiency of Electric Motors, 473008 Nanyang, Henan, CHINA [200609- 0]
- Tatung (Shanghai) Co., Ltd., Shanghai 201611, CHINA [200806- 0]
- Yuandong Electric Motor Laboratory, Ningde, Fujian Providence 352106, CHINA [201025- 0]
- GEIMM Ultra Test Lab, Monterrey Garcia, NL 66000, MEXICO [200606- 0]
- USEM de Mexico, S.A. de C.V., Apodaca NL 66600, MEXICO [200506- 0]
- TECO Electric & Machinery Co., Ltd., Taoyuan, TAIWAN [200378- 0]
- Tatung Company, New Taipei City 23743, TAIWAN [200590- 0]
- Motor Test Lab of Toshiba Industrial Products ASIA Corp., Bien Hoa City, Dong Nai Province, VIETNAM [200961- 0]

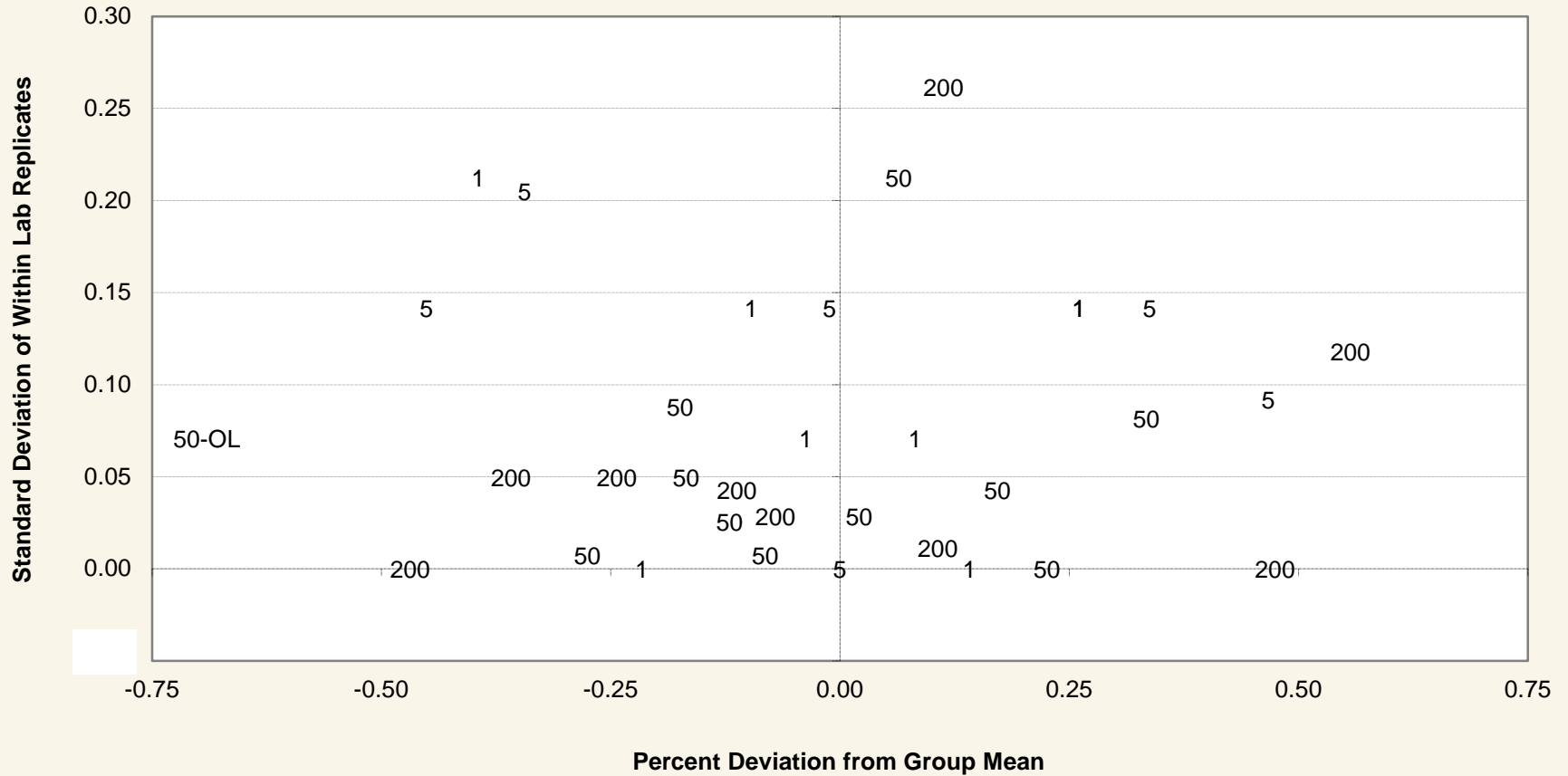


# NVLAP Proficiency Testing

- Round 1 – January 1999-December 2001; report issued August 2002
- Round 2 – April 2005-June 2011; report issued October 2012
- Round 3 (small motors) – 2013; cancelled – too expensive



### MOTORS - Data for Each Laboratory Each point includes two readings





# Questions?

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# Links

- <http://www.nist.gov/nvlap/>
- <http://www.nist.gov/nvlap/eem-lap.cfm>
- <http://www.gpo.gov/fdsys/pkg/CFR-2013-title10-vol3/xml/CFR-2013-title10-vol3-part431-subpartB.xml>
- <https://www.ilac.org/>
- <http://www.iaf.nu/>