

International Forum on Engineering Capacity

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Engineering Standards in the U.S. – Development and Academia

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“Scientist discover the world that exists; engineers create the world that never was.”

Theodor Von Kármán



“Standards support the global economy and improve the quality of life.”

Willie E. May

Under Secretary of Commerce, 2015

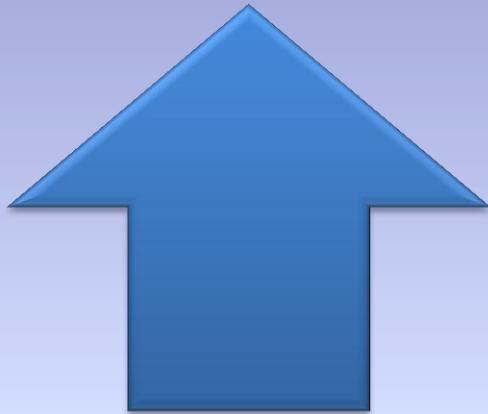


Overview

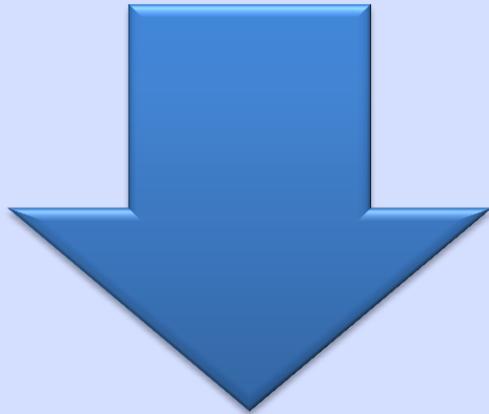
- Need for Standards Educations
- Engineering Standards Development
- Educational Perspective
- The IOT Landscape
- Conclusion



Engineering Standards



Drives Technology
Fuels the Global
Economy



Loss of Expertise
Minimal Exposure



STANDARDS DEVELOPMENT ORGANIZATIONS





43 Organizations

179 Industry
Sectors

19500 International
Classifications



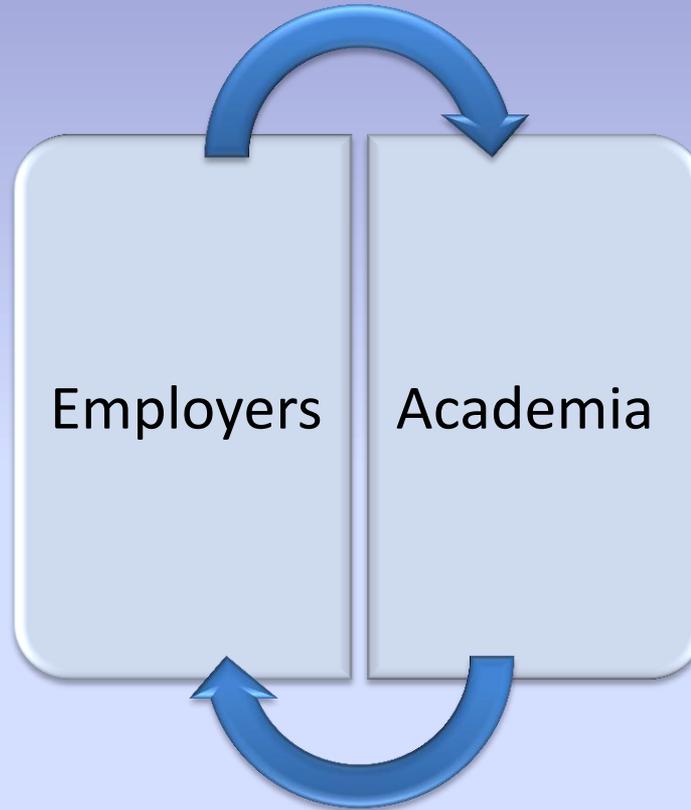
United States Standards Strategy



EDUCATIONAL PERSPECTIVE



What Industry Needs



What Academia Provides

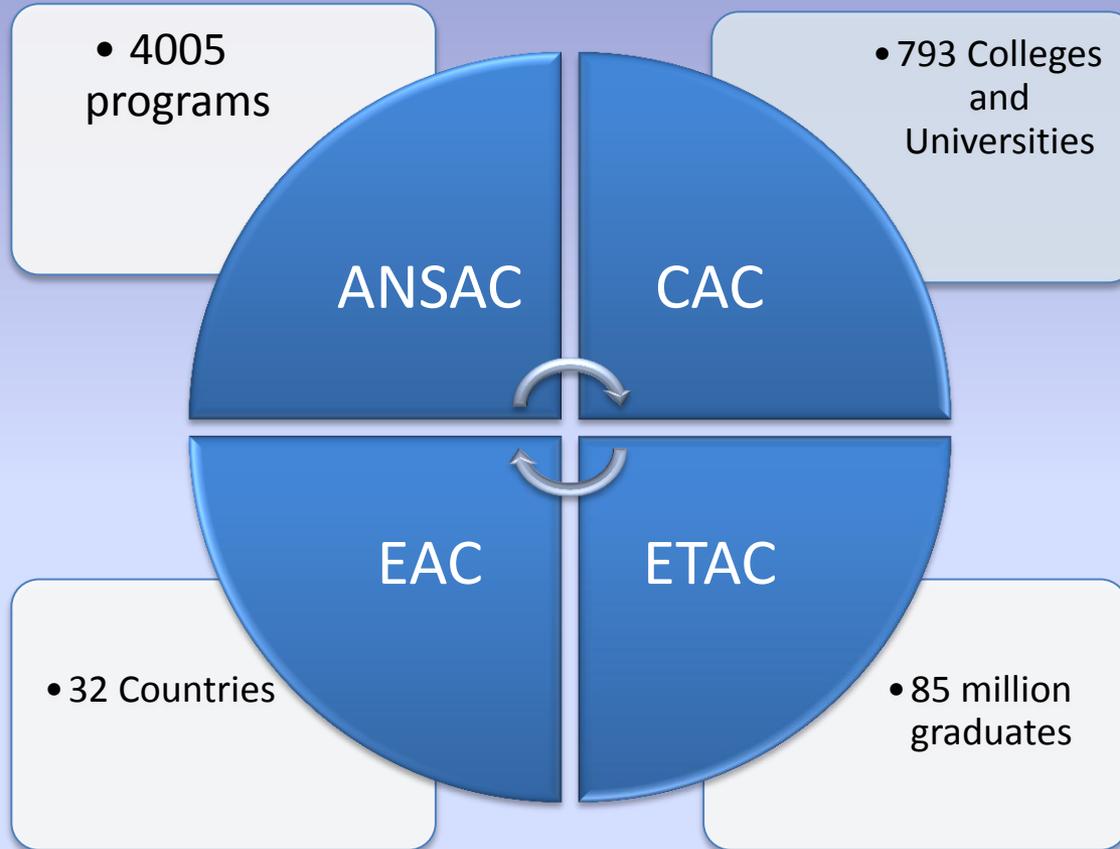


Educational Perspective

- Limited opportunities for standards education
 - On-Job-training
 - Courses offered by SDO's
 - Post Graduate Courses
- Implementation through Accreditation



ABET – Worldwide Accreditation Standard



ABET accreditation assures program meets the quality standards of the profession for which that program prepares graduates.



EAC General Criteria 5(c)

- “a general education component that complements the technical content of the curriculum and is consistent with the program and institution objectives.
- Students must be prepared for engineering practice through a curriculum culminating in a major design experience based on the knowledge and skills acquired in earlier course work and incorporating appropriate **engineering standards** and multiple realistic constraints.
- One year is the lesser of 32 semester hours (or equivalent) or one-fourth of the total credits required for graduation.”



NIST Standards Development Project

Began in 2012 to support the integration of standards education into engineering programs

NIST Standards Development Project



Funded Project Title

- Developing Standards-Based Educational Modules for Green Buildings and Sustainable Materials
- Standards-Aligned Design for Smart Sustainable Cities
- Incorporating Standards Education into the Digital Forensics Curriculum

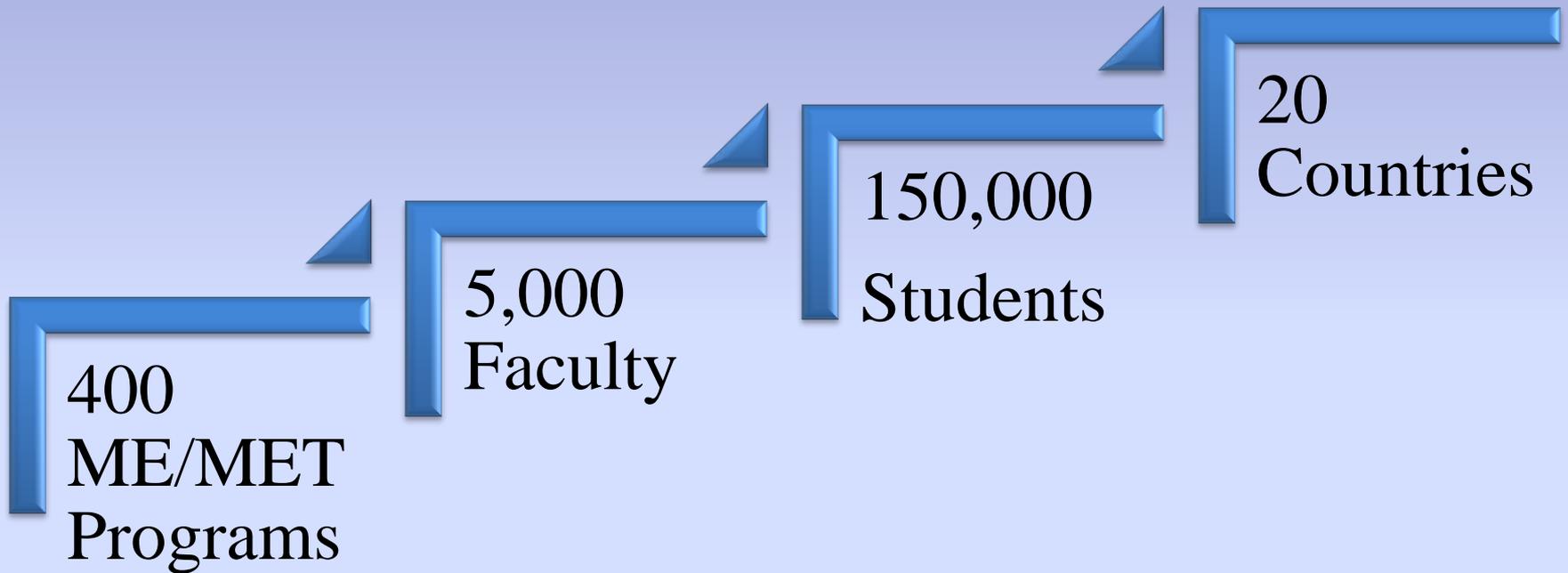


ASME Standards Infusion Project

- Threads standards education through curriculum for both mechanical engineering and mechanical engineering technology.



Infusion Project Goals



IOT – STANDARDS A LANDSCAPE TO CONCUR



Conclusion

- Academia must continue enhancing experiences for standards education.
- Government support of standards education programs is needed to enhance awareness and utility.
- Partnerships between SDO, Government and Academia are important.

