International Symposium on Measurement and Control Technology & Intelligent Manufacturing

Dalian, China 29 October 2015

European initiatives & IEC activities

Regnar SCHULTZ – Chairman CENELEC TC65X
Manufacturing functional model
EU Rolling Plan on ICT Standardization
Advanced manufacturing

- Transformation to:
  - New level of intelligent production
  - Intelligent process handling
  - New level of intelligent process integration

- Driven by the convergence of manufacturing and ICT

- Includes all optimization solutions that may improve the productivity and flexibility, lower waste and pollution, and lower costs in the entire manufacturing lifecycle
Advanced Manufacturing policy focuses on development and speeding up the uptake of AMT by European industry

Three objectives:
- Accelerate dissemination and commercialization of AMT,
- Boost the demand for AMT
- Reduce skills shortages and competence deficits

Many AMT initiatives in Europe (e.g. DE, FR, UK) and also outside Europe
Standards can play:
- Key role to accelerate the industrialization
- Stabilizing role of research activities

The opportunity is to ensure Europe's technological leadership through the massive integration of ICT into AMT

Amount of communication between machines, sensors and actors is increasing

Machines will more and more organize themselves as well as their supply chains
Standardization is of central importance and the biggest challenge for the success of AMT

Consensus-based standards and specifications form an indispensable basis
- Technical procurement
- Support communication
- Standardized terminology and concepts
- Ensure interoperability

AMT concepts will dramatically speed up if compatible with installed manufacturing base
Proposed new standardisation actions

- Common communications standards M2M
- E-skills standards to take into account the manufacturing skills for future manufacturers
- Review the recommendations for actions in the "German Standardization Roadmap Industrie 4.0"
- Study needed to analyse for revisions of existing standards (communications, M2M)
- Identify existing standards and standardization potentials at an early stage
To provide recommendations for an IEC strategy addressing manufacturing automation that will focus on ensuring real time needs of the manufacturing enterprise are sustained to achieve safe, secure and energy efficient factory operations.

To pursue an architecture for smart manufacturing that will enable it to function as a smart application within a broad IoT environment; and to leverage the adoption of current and next generation technologies to achieve safe and secure factory operations.
IEC Strategic Group Industry 4.0 - Smart Manufacturing - Tasks

- Produce a plan for long-term maintenance and use of:
  - Common Data Dictionary IEC 61360 DB
  - Transfer of the associated private interface tool
  - Promote and accelerate the use of IEC 61360 DB

- Ask ITU-R to reserve specific spectrums for use within Industrial Automation facilities
  - 80MHz in the range of 1.4 GHz to 6.0 GHz

- Based on the Smart Grid Mapping Tool:
  - Allocate resources to mapping tool development for Smart Manufacturing
IEC 62264 Enterprise-control system integration model:
Other models should be studied

- How to organize architectural model on conceptual level
- Need to be able to manage the data flow
- How to standardize 3-identified types of data
  - Public data
  - Proprietary data
  - Select data (licensable) – shared
- Problem for data interfaces is the current number of proprietary systems
TCs and SCs relevant to smart manufacturing and industrial automation to be informed of the work in SG8

Collaborate directly with impacted TCs to receive their input

Make recommendation to SMB for TC/SCs involvement in strategy implementation

Receive liaison reports from:

- ISO/TC184 AMT
- IEEE P2413 IoT
- ISO/IEC JTC1 WG 10 IoT
Welcome to the new World of:
- Advanced Manufacturing
- Smart Manufacturing
- Intelligent Manufacturing
- Internet of Things
- Internet of Everything
Connecting machines, IoT and the Cloud
Get more information from IEC e-tech: http://iecetech.org/issue/2015-05/Connecting-machines-IoT-and-the-Cloud
THANK YOU!