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|  | ANSI/ISA-88 (IEC 61512)functional design of Industry 4.0 cyber-physical systems |  **Training Course by** |
| **Objectives**Industry faces increasing agility requirements to timely adapt itself to fast changing environment. This concerns product development, facilities engineering, process improvement, innovative business models, technology opportunities. The consequence for IT is an acceleration of the digital transformation and a challenge for IT architectures. Business requirement expressiveness, flexible/adaptable processes and interoperability are major critical issues that are addressed by IEC61512 (ISA-88) and ISO/IEC62264 (ISA-95) leveraging the experience of numerous experts worldwide consolidated during the 20 years of development of these standards.The IEC61512 standard introduced in 1995 the concept of cyber-physical system honored by Industry 4.0: the informational artifact integrates with the physical object that collaborates with others while participating in a deterministic orchestration.This standard is often shrunk to recipe sequencers for batch processes. Recent interest in the "Industrial Internet of Things" (IIOT) is leading to renewed attention to this standard.This course adds formal modeling of physical flows which allows for strong consistency between the actual installation, sensors, actuators, and operational and transformational, physical, and business processes. It covers the essential points for cyber-physical and systemic automation.Attendees profilesCIOs, plant operators, methods and industrialization managers, project managers, control engineers, students of industry related cursi.PrerequisiteKnowledge of industrial control as an operator, process engineer or control engineer | **Content****Introduction*** Standardization bodies involved
* IT transformation lifecycle, modeling framework
* Introduction to the standard parts
* Object oriented control design, equipment entity / cyberphysical system concept

Operations control* Physical, process and procedural models
* Physical flow modeling
* Physical and business process integration
* Equipment control
* Physical process control

Product lifecycle management* Product transformation requirement specification

 | Languages* Procedural Function Chart (part 2 PFC) : Language for the specification and supervision of executable procedures/recipes
* Process Procedure Chart (part 3 PPC) : Language for the specification of product transformation
* Packaging Machine Language TR88.00.02 / PackML

Persistence and interoperability* Interoperability (Part 2) : Data structures, SQL, XML, OPC
* Production information historization, (part 4)

Industrial automation projects* Enterprise knowledge management
* Project breakdown and planning
* Specification forms examples

Implementation technologies* DCS and PLCs
* Batch managers, recipe sequencers
* Design tools

Course handoutThe course includes comprehensive documentation for the practical application of the knowledge acquired.Information/Registration : XXX |