Setting the Standard for Automation™

Greetings from the ISA

2018 ISA Water/Wastewater and
Automatic Controls Symposium

Graham Nasby, P.Eng, PMP, CAP
Vice-President, Industries & Sciences

Standards

Certification

Education & Training

Publishing

Conferences & Exhibits

Our Water/Wastewater SCADA Symposium!

2018 marks our 15th year and still going strong!

ISA's New Vision and Mission

- **Vision:**

Create a better world through automation

- **Mission:**

Advance technical competence; by connecting the automation community to achieve operational excellence.

Vision: ISA sets the standard for automation by enabling automation professionals across the world to work together for the benefit of all.

Mission: Enable our members, including world-wide subject matter experts, automation suppliers, and end users, to work together to develop and deliver the highest quality, unbiased automation information, including standards, training, publications, and certificates.

ISA's network of 400,000+ Automation Professionals

Identify industry needs

- Raw materials processing
- Discrete parts Manufacturing
- Engineering and construction
- Utilities, e.g., Water/Wastewater

Develop authoritative technical resources

- Standards
- Education and training
- Certification
- Publishing
- Conferences and exhibits

ISA's impact on the world of automation

Industry needs

Skilled workforce
- Fundamentals
- Troubleshooting

Objective skill assessments
- Demonstrate proficiency
- Recognize individual competencies

Best practices
- Networking opportunities
- Case studies of best practices

Continuing education
- Resources available 24/7
- Latest industry trends, applications

Operational excellence
- Improve performance, operability
- Reduce downtime, maintenance costs

ISA solutions

Education and training
- Hands-on and unbiased
- Expert instructors

Certification
- Certified Automation Professional
- Certified Control Systems Technician

Conferences and exhibits
- Division and Section conferences
- Technical conferences

Publishing
- Authoritative books
- Widely read magazine, technical journal, and all new app

Standards
- 150 consensus industry standards
- Reciprocal adoption with IEC

Result

Increased Productivity

Need: Skilled workforce

Solution: ISA education and training

ISA hands on training

- Classroom locations regionally
- In-plant training at your facility
- Section co-sponsored training

Boot camps

- 3 day and 5 day courses
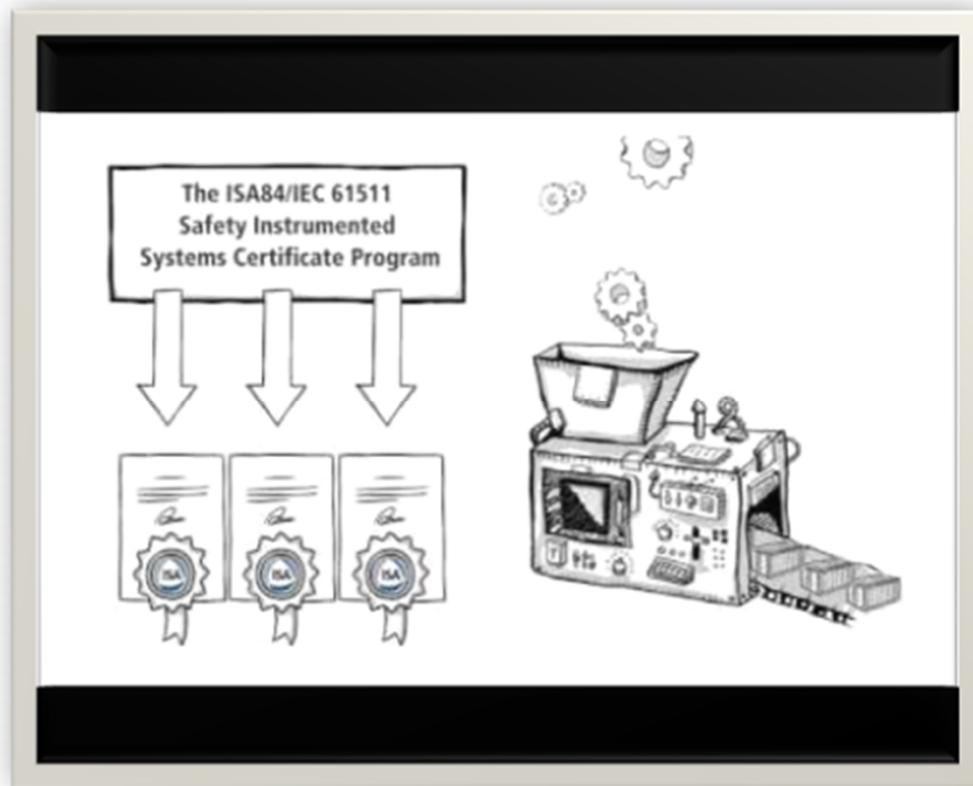

Online training

- Modular courses and instructor-assisted training

Need: Objective skill assessments

Solution: ISA certification and certificate programs

The ISA84/IEC 61511
Safety Instrumented
Systems Certificate Program

Solution: ISA conferences and exhibits

ISA Division symposia & technical conferences

gain high-value, peer-reviewed technical content across a wide variety of automation fields and disciplines

ISA Water/Wastewater Symposium

Earn CEU's and PDH's to support continuing education & licenses

Partnerships with WEF, AWWA, CWEA, CAWWA, and Others

Division symposia:

- Food and Pharmaceutical (FPID)

- Analysis (AD)

- Leak Detection & Repair (LDAR)

- Power Industry (POWID)

- International Instrumentation (IIS)

- Water/Wastewater & Automatic Controls (WWAC)

- Process Control and Safety (PCS)

Solution: ISA publishing

ISA books

- Dozens of authoritative titles written by industry experts; focused on real-world application of technology

ISA technical papers

- Thousands of comprehensive papers presented at ISA events; free downloads for ISA members

ISA Transactions

- Professional journal; published 6 times per year

InTech magazine

- Published 6 times per year, plus online and digital editions
- Practical solutions for today's challenges

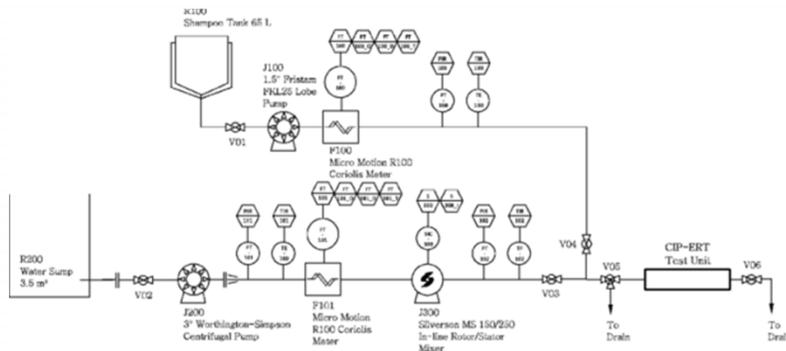**Solution:** ISA standards

ISA standards

- Open and consensus-based
- Industry-developed
- More than 4,000 professionals working on hundreds of documents

Benefits of standardization

- Streamline processes
- Improve safety, reliability
- Increase efficiency, productivity

Recently published ISA standards

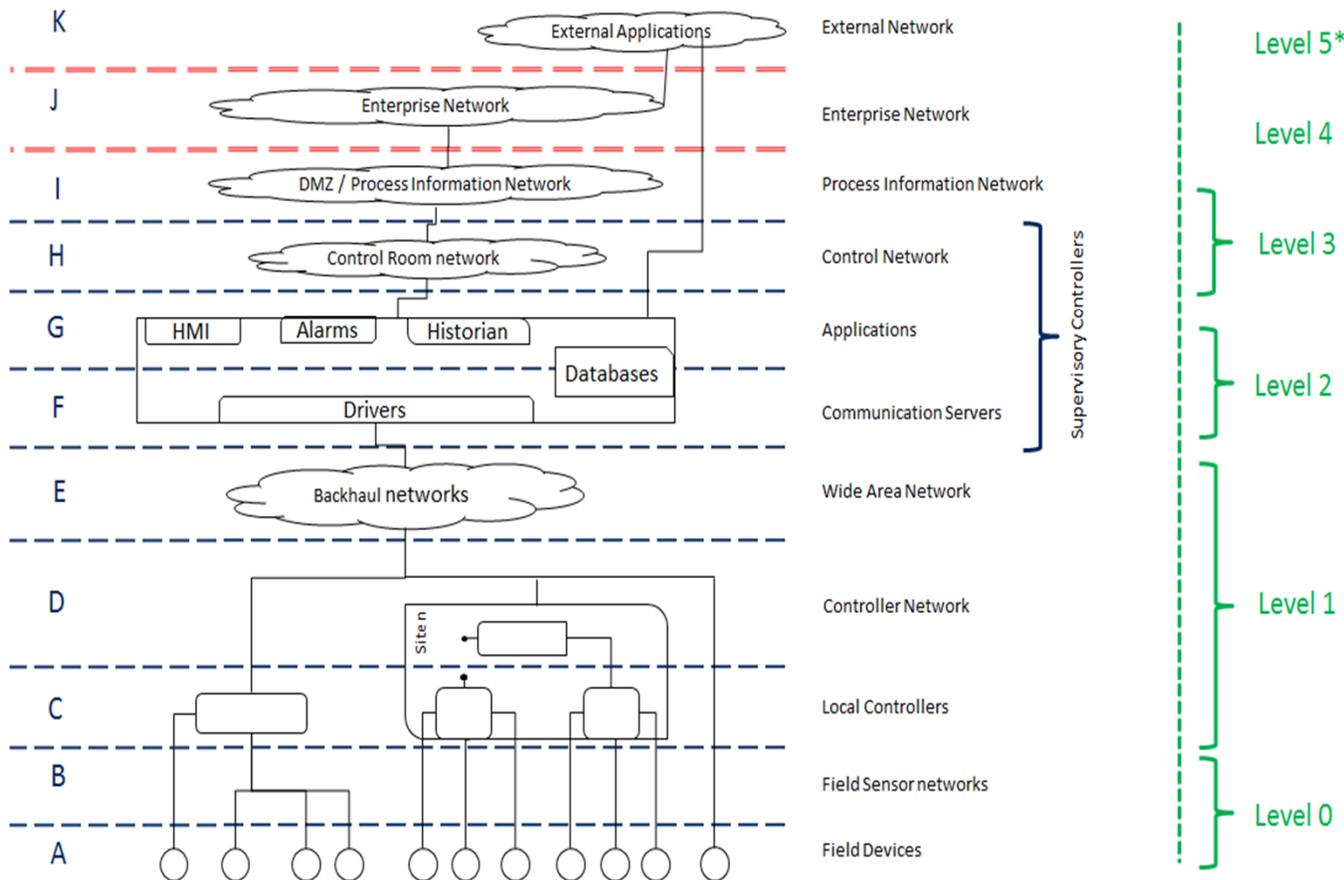|	
ISA-TR18.2.7	Alarm Management when Utilizing Packaged Systems
ISA-TR84.00.08	Guidance for Application of Wireless Sensor Technology to Non-SIS Independent Protection Layers
ISA-TR84.00.09	Cybersecurity Related to the Functional Safety Lifecycle
ISA-61511 Part 3 (IEC adoption by ISA84)	Functional Safety: Safety Instrumented Systems for the Process Industry Sector -- Guidance for the Determination of the Required Safety Integrity Levels
ISA-95.00.07	Enterprise-Control System Integration - Part 7: Alias Service Model
ISA-TR100.20.1	Common Network Management: Concepts and Terminology
ISA-RP105.01	Management of a Calibration Program for Monitoring And Control Systems
ISA–TR106.02	Procedure Automation for Continuous Process Operations – Work Processes
ISA-75.08.02	Face-to-Face Dimensions for Flanged and Flangeless Rotary Control Valve Bodies (Classes 150, 300, and 600)
ISA-TR96.05.01	Partial Stroke Testing of Automated Block Valves

ISA112 – SCADA Systems Standards Committee

- Formed mid-2016
- Co-chairs:
  - Graham Nasby (City of Guelph Water Services, SCADA Specialist)
  - Ian Verhappen (CIMA+, Senior Project Manager)
    graham.nasby@grahamnasby.com, ian.verhappen@cima.ca

- **Committee Members:** end users, software vendors, hardware vendors, system integrators, consultants, and government. Currently 150+ committee members.

- **Goal:** Develop a series of ISA standards and technical reports that provide guidance for system design, implementation, operation, and maintenance of SCADA systems for pipelines, water and wastewater, power, oil and gas, and other industries to support the overall integrity and reliability of these systems.

Solution: ISA112 SCADA Standards Committee

ISA112 SCADA Architecture Model

For both: Projects and Long Term Management

		Purdue Reference Model
K	External Applications — External Network	Level 5*
J	Enterprise Network — Enterprise Network	Level 4
I	DMZ / Process Information Network — Process Information Network	
H	Control Room network — Control Network	Level 3
G	HMI · Alarms · Historian — Applications	Level 2
F	Databases · Drivers — Communication Servers	
E	Backhaul networks — Wide Area Network	
D	Controller Network	Level 1
C	Local Controllers	
B	Field Sensor networks	Level 0
A	Field Devices	

Supervisory Controllers

Site n

Notes:
1 Letters are used avoid potential conflict with ISA-95 and other 'Layer' models.
2 Routers and Firewalls between layers are not shown.
3 Other system-specific servers, applications, and workstations are not shown.
4 Remote-hosted external applications (Cloud) could be configured to attach to devices at any level, with appropriate firewalls, tunneling and routing.
* We show a Purdue Level 5. The true Purdue Model only has levels 0-4 because it did not anticipate external applications.

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Solution: ISA112 SCADA Standards Committee

ISA112 SCADA Lifecycle

For both:
- Projects
- Long Term Management

ISA membership:
Your connection to the world of automation

Grow locally, impact globally

- High quality events

- Active industry divisions

- Focusing on our membership growth and engagement

- Goal is to keep and grow our members

- Section engagement with new and standing members

- Introducing new professionals