Annual Report

2020

Creating a better world through automation
2020 was a year to remember – and one that most would love to forget. The novel coronavirus, known as COVID-19, ravaged the globe with more than 103 million cases and over 2.2 million deaths. Putting the health and safety of our friends and family first, ISA and world lived the year mostly in lockdown. The impact of these global restrictions was significant.

ISA was challenged to deliver on its mission in new and innovative ways. We could not hold in-person events or training courses; our sections could not bring members together. ISA needed to pivot – quickly. We had to come together, apart.

Led by an executive board with more than 420 years of combined experience, ISA made immediate and effective changes to its roadmap.

Technical content planned for in-person events was redeveloped into a robust virtual events program in four key areas - Cybersecurity; IIoT & Smart Manufacturing; Digital Transformation; and Process Control & Instrumentation.

Training courses were rapidly developed into virtual courses. We delivered at-home, online certification exams for the first time. Our online, instructor-assisted course revenue increased 30%. We refocused our European operations to delivery of online training which allowed significant expansion of offerings to more regions of the world.

A revamp of the IT systems – that was underway before the pandemic – continued even as ISA’s staff team transitioned to at-home work. The launch of these systems came with a new, members-only, technical discussion ISA Connect. Through the work of the Divisions, ISA Connect Live delivered a new way for members to engage in technical discussions in a live, virtual format.

And even with a global crisis, ISA could not let 2020 go without some celebrations of its 75 years of serving the automation community. The special anniversary edition of InTech is a celebration of our history and our future. And while the Annual Leadership Conference and meeting of the Council of Society Delegates was cancelled, the Council moved forward with a virtual vote to approve changes to the ISA bylaws to enable to Society for the next 75 years.

Our “new normal” is just beginning. ISA stands ready to make the world a better place through automation.
Executive Board

PRESIDENT
Eric Cosman
OIT Concepts, LLC

PRESIDENT-ELECT
SECRETARY
Steve Mustard
National Automation, Inc.

PAST PRESIDENT
Paul Gruhn
aeSolutions

TREASURER
Jon DiPietro
Liberty Digital Marketing

Mark Arkell
JMP Solutions

Don Bartusiak
Collaborative Systems Integration, LLC

Marty Bince
TEC Edmonton

Nilangshu Dey
Qatar Petroleum

Jim Garrison
aeSolutions

Carlos Mandolesi
Trinity College Dublin

Matthew Maynard
Francis Tuttle Advanced Technical Center

Mary Ramsey
ISA

Scott Reynolds
Johns Manville

Debashis Sadhukhan
NASA Glenn Research Center

Dawn Schweitzer
Eastman Kodak Company

Prabhu Soundararajan
Honeywell

Ashley Weckwerth
Burns & McDonnell

Dr. Maurice Wilkins
Yokogawa UK Ltd.

Dr. Shari Worthington
Telesian Technology, Inc. and Worcester Polytechnic Institute
75TH ANNIVERSARY

75 years of advocating for the people and technology that move societies and economies forward

75 years of creating and supporting industries that power our world

75 years of difference-makers and risk-takers on whose shoulders we stand today

Click for video history of InTech

Click for ISA historical timeline

Cheers to ISA on founding day

^ Living LaVida Lockdown
**Vision:**
Create a better world through automation

**Mission:**
Advance technical competence by connecting the automation community to achieve operational excellence

**Values:**

<table>
<thead>
<tr>
<th>Excellence</th>
<th>Diversity and Inclusion</th>
<th>Professionalism</th>
<th>Integrity</th>
<th>Collaboration</th>
</tr>
</thead>
<tbody>
<tr>
<td>We provide industry-leading, unbiased content developed and vetted by a community of experts</td>
<td>We strive to be a global, diverse, and welcoming organization</td>
<td>We uphold the highest standard of competence and skill in everything we do</td>
<td>We act with honesty, integrity, and trust, respecting others in all that we do</td>
<td>We seek out opportunities to work together for the benefit of the Society, its members, and our profession</td>
</tr>
</tbody>
</table>
STRATEGIC OBJECTIVES

Industry Reach and Awareness
Establish and advance ISA’s relevance and credibility as the home of automation by anticipating industry needs, collaborating with stakeholders, and developing and delivering pertinent technical content.

Member Development and Engagement
Enhance member value and expand engagement opportunities to nurture and grow a more diverse and global community to advance the automation profession.

Technical Education and Certification
Become the recognized leader in automation and control education, providing training, certifications, and publications to prepare the workforce to address technology challenges in the most flexible and relevant ways.

Leadership and Business Skill Development
Create opportunities for members to improve critical leadership skills, to build a network of industry professionals, and to develop the next generation of automation professionals.
Megatrends are revolutionary. They are powerful, transformative forces that change the global economy, business, and society. Megatrends both drive and are driven by disruptive innovations. In celebrating our past, ISA identified the megatrends impacting the world of automation.

- **Workforce of the Future**
  
  Industry will require more knowledgeable personnel with practical thinking skills and manufacturing process know-how.

- **Standards Under Pressure**
  
  Global standards are emerging, driven by Industry 4.0, IIoT, and an influx of open standards-based hardware and software.

- **Manufacturing Technology Transformation**
  
  Digitalization will accelerate, pushing manufacturers to transform and enabling innovation.

- **Environmental, Safety, and Security Evolutions**
  
  Societal and business concerns about cybercrime, worker safety, sustainability, and more will require a response.
**Cybersecurity**

**Webinars**
1 Registrants: **456**

**Conferences**
2 Registrants: **903**

60% member / 40% nonmember

**IIOT and Smart Manufacturing**

**Webinars**
3 Registrants: **1,145**

**Conferences**
1 Registrants: **1,219**

22% member / 78% nonmember
Digital Transformation

Webinars
4
Registrants: 604
62% member / 37% nonmember

Conferences
1
Registrants: 783
70% member / 30% nonmember

Process Control and Instrumentation

Webinars
6
Registrants: 1,681
54% member / 46% nonmember

Conferences
1
Registrants: 1,116
59% member / 41% nonmember
InTech and InTech Focus

6 Issues Published

82 featured articles

205,000+ magazines printed

140,000 digital issues distributed

4 InTech Focus ebooks

21 Intech Plus editions

InTech 75th Anniversary Special Edition

12 Articles

17 Member Remembrances

11 Standards Profiles

26 Titans of Automation

21 Automation Milestones

4 Megatrends Identified
83 topical newsletter editions, each reaching an average of 124,000 recipients
Bill Lydon’s Top Trends for Automation & Control sponsored by Automation.com

The Dangers of DIY Connectivity sponsored by PTC

Air/Gas Flow Measurement Solutions Handbook sponsored by FCI

OPC UA Users and Experts Knowledge sponsored by OPC Foundation

5,000+ Webinar registrations
New books published

Manufacturing Execution Systems: An Operations Management Approach

Start-Up: A Technician’s Guide

Basic and Advanced Regulatory Control: System Design and Application, 3rd Edition – Revised

Bestsellers


Calibration: A Technician’s Guide

The Condensed Handbook of Measurement and Control, Fourth Edition

Measurement and Control Basics, Fifth Edition


Safety Instrumented System Design: Techniques and Design Verification

Analytical Instrumentation

Control Systems Engineer Technical Reference Handbook
STANDARDS

New standards published

ISA/IEC 62443-3-2, Security Risk Assessment for System Design

ISA-95.00.08, Enterprise/Control System Integration – Information Exchange Profiles

ISA-TR84.00.04, Part 1 - Guidelines for the Implementation of ANSI/ISA-61511-1

ISA-84.91.01, Identification and Mechanical Integrity of Process Safety Controls, Alarms, and Interlocks in the Process Industry Sector


ISA-96.03.01, Guidelines for the Specification of Heavy Duty Pneumatically Powered Quarter-Turn Valve Actuators

Highlights

1. ISA and IHS Global Inc. negotiated and agreed to a new five-year contract by which IHS continues to be the primary worldwide online distributor of ISA standards.

2. New liaisons were established with the International Electrotechnical Commission (IEC) by which ISA standards committee members are taking an active role in the adoption and development of two ISA original standards as IEC standards: ISA-88, Batch Control, and ISA-101, Human-Machine Interface.

3. Feature article in 75th anniversary InTech provided insiders’ perspectives on the developments and impacts of groundbreaking ISA standards in areas including cybersecurity, batch process control, enterprise-control system integration, safety instrumented systems, management of alarm systems, and human-machine interface.
Survey
The Value of Standards

A worldwide survey of automation engineering professionals highlighted the essential role of standards in achieving operational excellence in industry. Responses showed that large majorities believe industry standards make processes and facilities safer and more cyber-secure, help companies prove compliance to regulations, and facilitate training and cross-training in technical jobs.

Which benefits do you believe industry standards deliver?

- 96% Standards will be important or extremely important in the future.
- 87% Industry standards make processes and facilities safer.
- 81% Industry standards help companies prove compliance to regulations.
- 67% Industry standards make it easier to train and cross-train people in technical jobs.
- 63% Industry standards increase productivity.
- 57% Industry standards make processes and facilities more cyber-secure.
TOP 5 Training Courses by revenue and attendance

IC32E,M: Using the ISA/IEC 62443 Standards to Secure Your Control Systems
IC33E,M: Assessing the Cybersecurity of New of Existing IACS Systems
TTBC: ISA Technician Training Boot Camp
EC50E: Safety Instrumented Systems—A Life-Cycle Approach
IC34M: Cybersecurity Design, Implementation & Testing

Now available digitally:
IC30M: SCADA Systems Integration
IC39M: Management of Alarm Systems
EC00M: Certified Automation Professional® (CAP®) Exam Review Course
TS00M: Certified Control Systems Technician® (CCST®) Level 1 Review Course
EC51CTM: Technical Operations & Maintenance Roles in the Safety Lifecycle
IC46M: Overview of ISA/IEC 62443 for Product Suppliers
IC87M: Cyber Sensors: Advancements in Automation Cyber Physical Security
IC85M: Overview of Industrial Wireless Technology

5813 students

Locations:
- NORTH AMERICA: 19.6%
- EUROPE: 15.7%
- LATIN AMERICA and the CARIBBEAN: 43%
- MIDDLE EAST and AFRICA: 3.4%
- ASIA and the PACIFIC: 11%
- UNKNOWN: 7.3%
(hey, it was virtual!)
### ISA Certified Automation Professional® (CAP®)

Certified Automation Professionals: 677
- **New:** 42

Certified Automation Professional Associate (CAPA): 10
- **New:** 5

### ISA Certified Control Systems Technician® (CCST®)

<table>
<thead>
<tr>
<th>Level</th>
<th>Total</th>
<th>New</th>
</tr>
</thead>
<tbody>
<tr>
<td>Associate</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>Level 1</td>
<td>1591</td>
<td>83</td>
</tr>
<tr>
<td>Level 2</td>
<td>440</td>
<td>22</td>
</tr>
<tr>
<td>Level 3</td>
<td>429</td>
<td>15</td>
</tr>
</tbody>
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### ISA/IEC 61511 Safety Instrumented Systems Certificate Program

- **Total:** 260 New: 31
- **Level 1:** Total: 58 New: 13
- **Level 2:** Total: 52 New: 11
- **Level 3:** Total: 118

### ISA/IEC 62443 Cybersecurity Certificate Program

- **Total:** 1,064 New: 407
- **Level 1:** Total: 462 New: 154
- **Level 2:** Total: 294 New: 100
- **Level 3:** Total: 259 New: 84
- **Expert:** Total: 248
MEMBERSHIP

Professional members

12,721
Total
-8.63%
Growth Rate

102
countries

$ In understanding that many members may be experiencing lay-offs, furloughs, and salary reductions, ISA offers a hardship waiver by request.

* This denotes the shift in the percentage of members by area from the previous year.

Student members

2,613
Total
-19%
Growth Rate

53
countries

$ In understanding that many members may be experiencing lay-offs, furloughs, and salary reductions, ISA offers a hardship waiver by request.
Online engagement platform launched in August 2020

Over 600 topical discussion posts

**Top 3 Discussion Threads (by replies)**
- ISA Digital Twin
- Industrial Networks & Protocols
- What is Advanced Control?

**Most Used Topic Tags**
- Connectivity and Cybersecurity
- Instrumentation
- Oil and Gas
- Smart Manufacturing
- Operations and Management

Connect Live – interactive topical discussions launched in September 2020

12 sessions hosted by Presidents and Technical Divisions
SECTIONS AND DIVISIONS

120
Professional Sections

110
Student Sections

17
Divisions

Celebrating Excellence

Bangalore
Section Excellence

Analysis
Division Excellence

Dattatray Sawant
Section Leader Excellence

Ed Naranjo
Division Leader Excellence

EDUCATION FOUNDATION

24,000 USD
scholarships awarded to 12 recipients
Member Satisfaction Survey

ISA regularly compares itself to other associations through benchmarking key performance metrics. A survey was conducted to explore member needs and perceptions as they relate to ISA’s programs and services. The response rate was 15.86%.

Key Findings

31
Net Promoter Score*

9 points higher than 2019

Above the average score of 19 for scientific/engineering associations based on McKinley Advisors 2017 “The Health of Associations in the 21st Century” report.

79%
ISA is preferred membership association

>50%
belong to other associations

Give it to us straight...

The loyalty indicator used in the analysis is Net Promotor Score (NPS), the worldwide standard by which organizations measure, understand, and improve customer experience. The NPS is calculated by subtracting the percentage of those holding negative opinions of ISA from those likely to promote ISA.

Of total respondents:

60%
from North America

94%
gender is male

55%
over the age of 55
Young Professionals (YPs)

Formally launched in 2020, ISA Young Professionals (YP) is an inclusive community where young professionals can make an impact and influence the future of automation. Through the work of the YP Engagement Committee, YPs discover opportunities to develop leadership skills, enhance professional networks, and engage local and technical mentors.

Member Satisfaction Survey Results
Respondents under age 35

- 60% from outside North America
- 89% gender is male
- 50% members less than 2 years
- 86% ISA is preferred membership association
- 42% belong to other associations

Net Promoter Score

![Net Promoter Score](image)

- 18 points higher than 2019

Key 2020 Accomplishment

- Launched ISA Connect Live Fireside Chats – Engaging conversations with ISA’s Past Presidents

![Fireside Chat](image)
HONORS AND AWARDS

Fellows

Donald Dunn  David Rahn  John Sorge  Richard Van Fleet

Celebrating Excellence

Excellence in Technical Innovation, Endowed by Honeywell UOP

Soloman Almadi

Excellence in Technical Presentation

Abdulkadar Susnerwala

Excellence in Education

Himanshu Patel

Mentoring Excellence

Greg McMillan

Excellence in Enduring Service

Catherine Andrews

Standards Excellence

Donald Dunn

James Haw

Volunteer Leader of the Year

Cheri Haarmeyer

Ian Verhappen

Clifford Wuertz
Leader Satisfaction Survey

The response rate of this annual survey: 11%

Of the respondents, the leaders were from:
- Sections 83.18%
- Divisions 14.49%
- Districts 12.63%
- Operations Departments 6.07%
- Technical Departments 5.61%
- and Executive Board 6.54%

Skills gained by volunteering with ISA

- Leadership: 70%
- Technical Knowledge: 63%
- Communications: 56%
- Public speaking: 50%
- Mentoring: 39%
- Time management: 32%
- Conflict resolution: 23%
- Negotiation: 18%
- Other: 8%

Most rewarding part of being an ISA Leader

Succession

- Leaders would volunteer again: 88%
- Leaders encourage others to volunteer: 94%

Company Support

- Allowed time by employer to volunteer: 33%
- Volunteers’ membership dues paid by employer: 34%
- Leaders did ISA work on their personal time: 75%
- Leaders would volunteer even if their company did not provide support: 90%

New Leaders

- Served less than 4 years, up from 27% in 2019: 36%
- 39% section leaders served less than 4 years
- 16% division leaders served less than 4 years

Young Leaders

- Under the age of 36, up 8% from 2019: 22%
- 25% of section leaders are under the age of 36
- 10% of division leaders are under the age of 36
SOCIAL MEDIA

Followers by platform

- Pinterest: 420,510
- Facebook: 362,241
- LinkedIn: 99,241
- Twitter: 22,100
- Instagram: 8,692
- YouTube: 7,980

Paid Impressions by platform

- Facebook: 139,360,530
- Reddit: 8,308,344
- Twitter: 3,207,765
- Pinterest: 3,153,478
- TikTok: 1,276,418
- Instagram: 1,269,282
- Snapchat: 126,052

Overall, ISA averages 840 impressions per dollar spent in social advertising.

Social is the number 2 driver of all traffic to all isa.org pages only behind organic search.
6 In-person event presentations
8 webinars
Co-sponsored a virtual conference with Saudi Aramco
Collaborated with ISAGCA in study of IIOT devices and systems

ISA/IEC 62443 ISASecure® Certification

- 13 new SDLA development process certifications (62443-4-1) including Emerson, Johnson Controls, ABB, GE, Yokogawa, Wartsila, Honeywell, Schneider Electric
- 11 new CSA component certifications (62443-4-2) including Honeywell, GE, ABB, Wartsila, Schneider Electric
- 1 SSA system certification (62443-3-3) Emerson

Accredited Certification Bodies by location

2 Singapore 1 Taiwan 2 Netherlands 1 Spain 1 Italy 1 Switzerland 1 Canada
**ISA100 Wireless Certified™**

Completed OPC UA project resulting in a formal OPC specification for the ISA100 Wireless application layer.

**ISA100 Wireless Certification**

- Certified 7 products including devices from Honeywell, Yokogawa, Armstrong International and Centero
- Sold 4 ISA100 Wireless rapid development kits (RDK) which reduce the time to develop a working ISA100 Wireless device from 14 months to 3 weeks
• Established ICS4ICS program (Incident Command System for Industrial Control Systems) under ISAGCA in a public/private partnership with US DHS and FEMA
• Established an advocacy group to address regulations and legislation
• Began collaborations with universities and INL on formalizing training and education programs for cybersecurity workforce development
2020 Operational Net
Actual: -563,559 / Budget: 35,180

ISA experienced an almost 30% decline in revenue directly related to the COVID-19 pandemic. While costs were reduced 23%, the operating results were a deficit. Even with these results, ISA posted a net profit of over 3.4 million when considering interest and dividend income and realized and unrealized gains from investments.

ISA remains financially sound with total assets in excess of 40 million and liquid assets (current assets plus marketable securities) more than six times the total liabilities.