# International Society of Automation
# ISASecure Certification Scheme Update

*Presentation Starts at 11:00 a.m. EDT USA*

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Consortia and Conformity Assessment

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***Elevating OT cybersecurity from an art, to a science, to an engineering discipline.***

**ISASecure®**

**ISA**

38,500 MEMBERS

135 SECTIONS

44 COUNTRIES

350,000 CUSTOMERS

STANDARDS

EDUCATION

CERTIFICATION

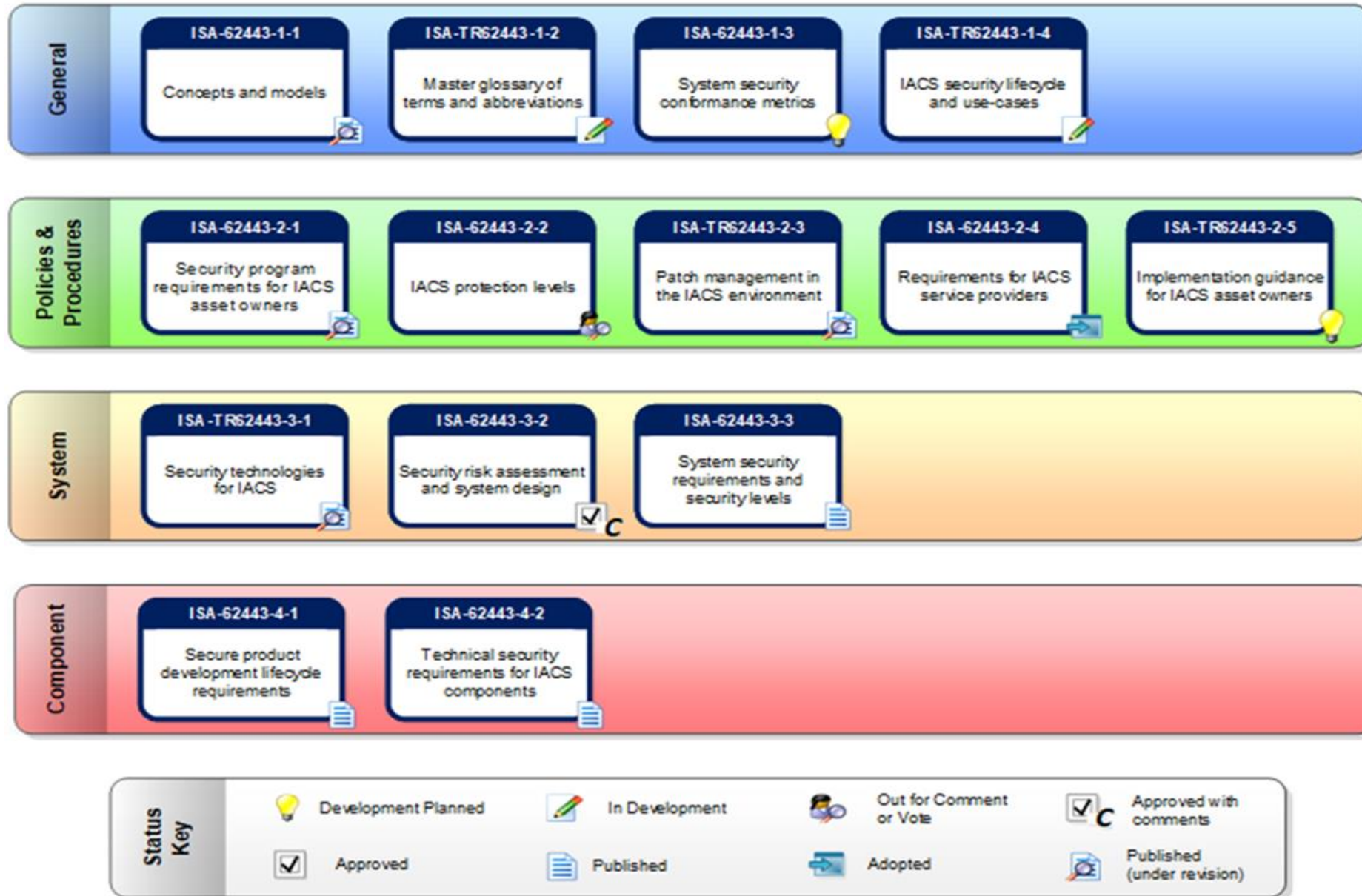CONFERENCES

PUBLICATIONS

COMPLIANCE

# ISA99 (ISA/IEC 62443) Global Cybersecurity Standards Committee

- Non-IT, Not consumer grade, OT in 16 CI sectors, non-telecom & finance. Water & Wastewater, power generation & distribution, O&G, pipelines, building automation (smart buildings & smart cities), medical equipment, food & pharma, manufacturing & industrial.

- The ISA99 committee was **formed in 2002 –** works closely with technical committee 65 of the International Electrotechnical Commission (IEC).

- ISA/IEC 62443 standards contain **over 500 normative requirements** and associated rationale that address all phases of the system life cycle,

- The **committee has over 1,000 volunteer members,** representing a wide range of industry sectors and constituency groups from all areas of the world.

- The ISA99 committee includes **formal and informal liaison relationships with** other standards development organizations, consortia and interest groups such as IEC, OPAF, NAMUR, WIB, NIST, DHS, INL, ISASecure, and ISAGCA.

- **ISA 62443 is the most referenced standard in the NIST CSF**

# ISA/IEC 62443 Standards



**General**

| ISA-62443-1-1 | ISA-TR62443-1-2 | ISA-62443-1-3 | ISA-TR62443-1-4 |
|---|---|---|---|
| Concepts and models | Master glossary of terms and abbreviations | System security conformance metrics | IACS security lifecycle and use-cases |

**Policies & Procedures**

| ISA-62443-2-1 | ISA-62443-2-2 | ISA-TR62443-2-3 | ISA-62443-2-4 | ISA-TR62443-2-5 |
|---|---|---|---|---|
| Security program requirements for IACS asset owners | IACS protection levels | Patch management in the IACS environment | Requirements for IACS service providers | Implementation guidance for IACS asset owners |

**System**

| ISA-TR62443-3-1 | ISA-62443-3-2 | ISA-62443-3-3 |
|---|---|---|
| Security technologies for IACS | Security risk assessment and system design | System security requirements and security levels |

**Component**

| ISA-62443-4-1 | ISA-62443-4-2 |
|---|---|
| Secure product development lifecycle requirements | Technical security requirements for IACS components |

**Status Key**

| | | | |
|---|---|---|---|
| 💡 Development Planned | ✏️ In Development | 🔍 Out for Comment or Vote | ☑️C Approved with comments |
| ☑️ Approved | 📄 Published | ➡️ Adopted | 🔍 Published (under revision) |

ISA

# ISA/IEC 62443 Status

## ISA/IEC 62443 is a technical horizontal standard as of 2021.

Industry sectors must adopt ISA/IEC 62443 for their cybersecurity requirement in IEC industry sector standards by creating sector specific **'security profiles'.**

Sectors that we know are adopting ISA/IEC 62443:

1. BCS-Smart Buildings/Smart Cities (building control/building management systems). **BCS Framework completed in 2021** by ISCI/NEMA/BCS.
2. Medical Devices – Usage guide for applying ISA/IEC 62443 for securing medical devices. **Completed in 2015** by MDISS.
3. Electric Power –**Security profile development** for substations in startup phase.
4. DER (Distributed Electric Resources) – Security profile in start up phase in USA.

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# ISA/IEC 62443 Adoption by Suppliers

**Product suppliers** have been developing automation **products certified to ISA/IEC 62443** security lifecycle practices in their development processes since 2010. Company examples include:

**ABB, Aveva, Azbil, Bayshore Networks, Carrier Corporation, CISCO, Eaton, Emerson Automation Solutions, Emerson Power & Water Solutions, GE Power Conversion, Hima, Hitachi, Honeywell, Johnson Controls, Nexus Controls, Rockwell Automation, Schneider Electric, Siemens, Toshiba, Yokogawa, Valmet, Wartsila, and many others.**

Certifications are offered by **ISASecure** and **IECEE** schemes as well as individual certification bodies around the globe.
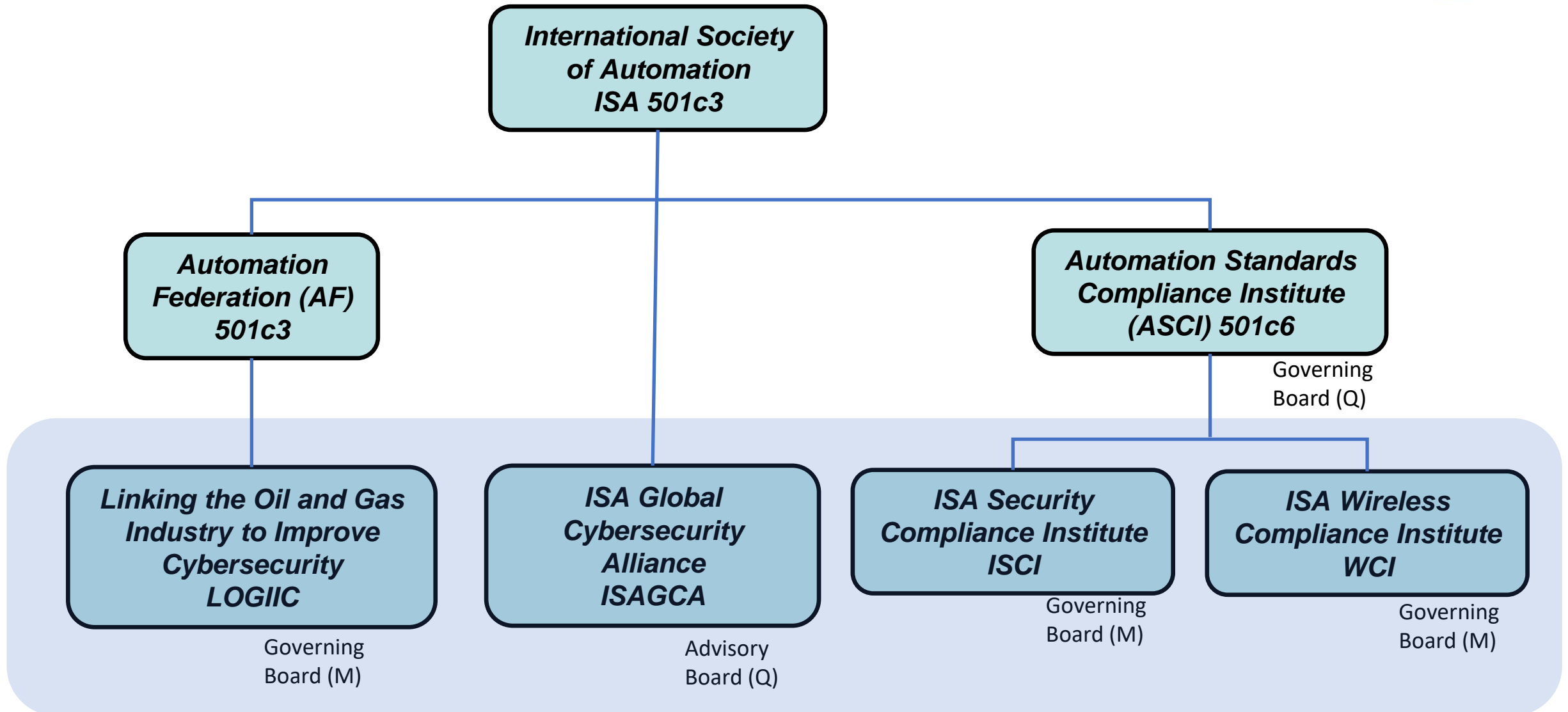
ISA**Secure**®

# ISASecure Fast Facts

Globally recognized ISA/IEC 62443 certification brand

- Started in 2007, first certificate issued in 2011
- Ten certification bodies in EU, ASEAN, Japan, USA, Canada
- Certifies systems, components, development organizations
- Promotes adoption of ISA/IEC 62443 standards in collaboration with ISAGCA and ISA99 standards committee
- OPAF agreement to use ISASecure scheme for assessing prototype components
- **New certifications** in development for IIOT and  operating sites
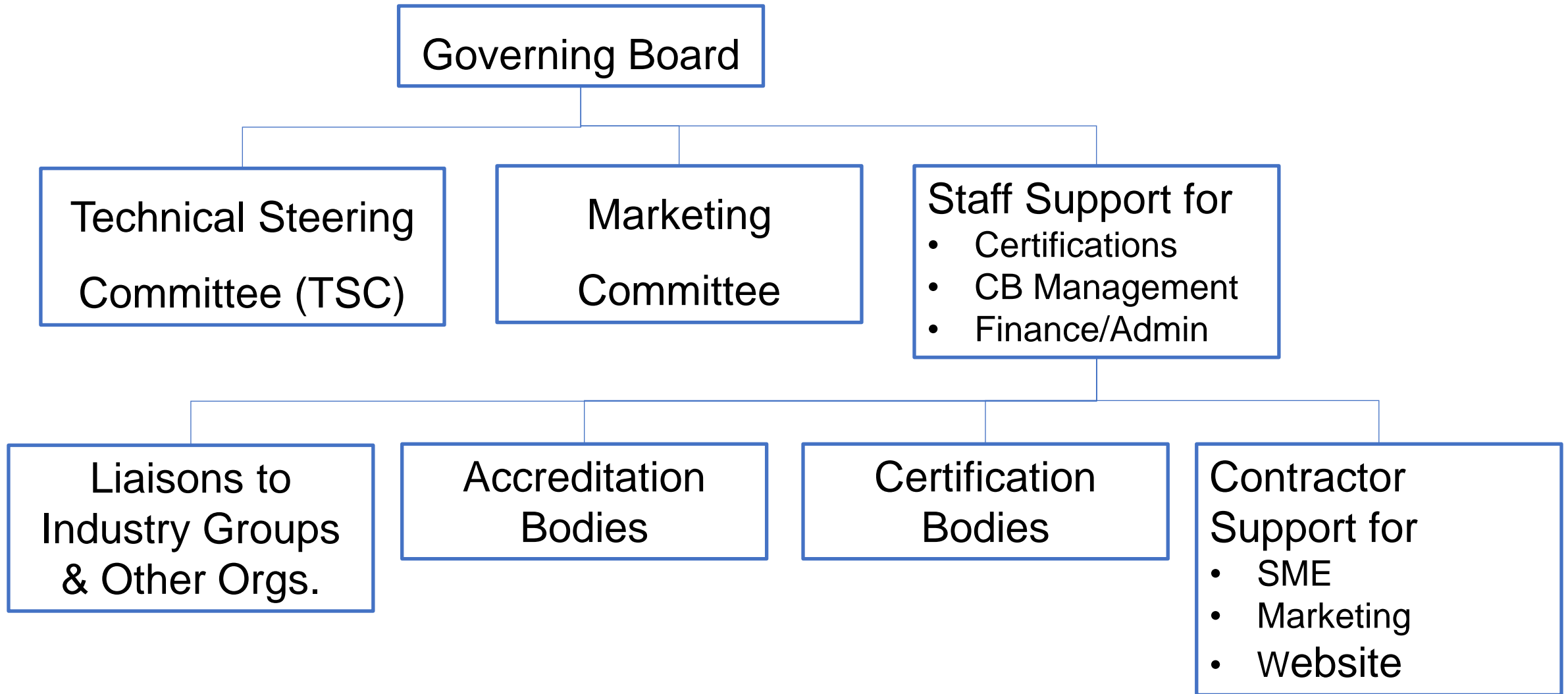- BMS & electric sector products are showing up for ISASecure certifications
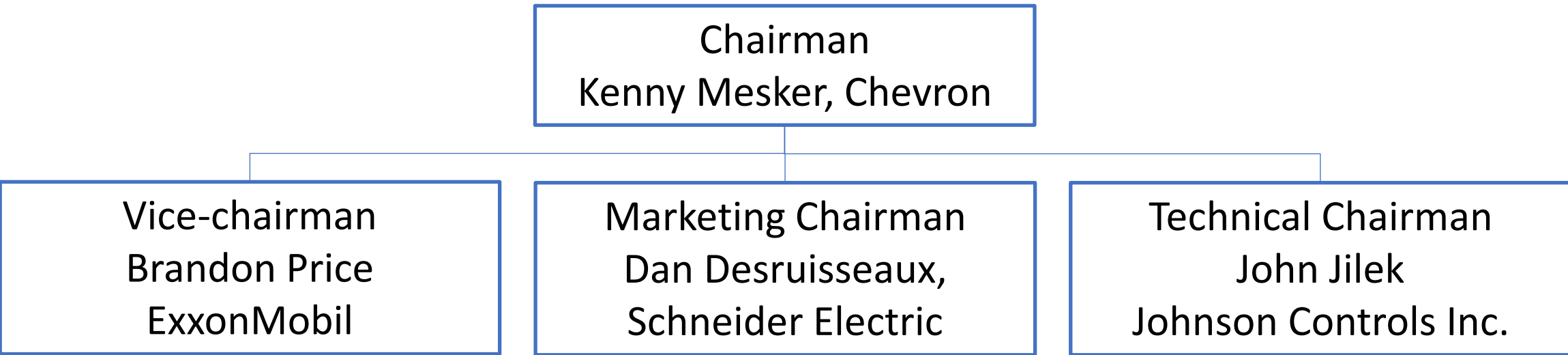
# 2022 ISA Consortium Organization
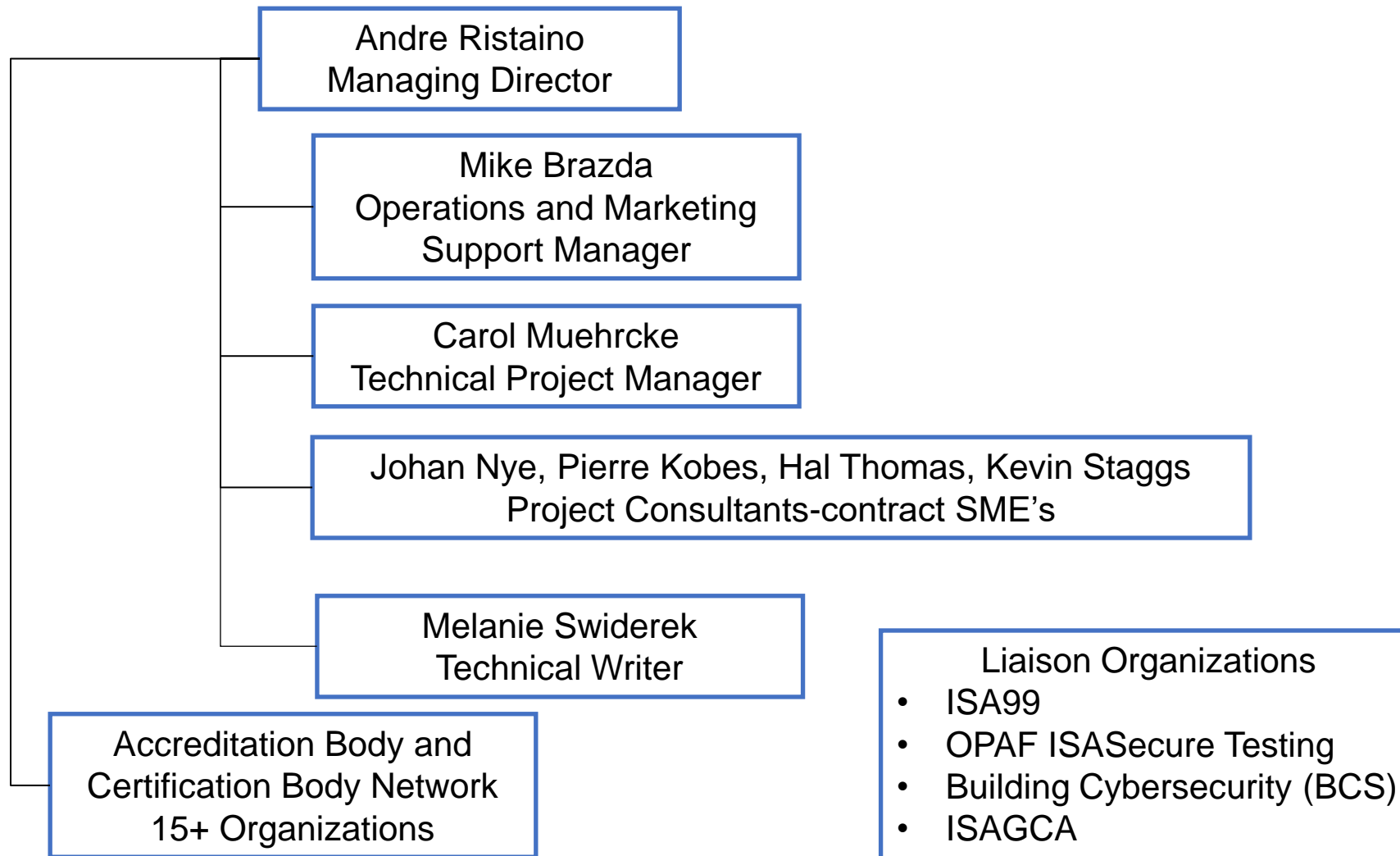## Company / Industry Group Memberships



**International Society of Automation ISA 501c3**

**Automation Federation (AF) 501c3**

**Automation Standards Compliance Institute (ASCI) 501c6**

Governing Board (Q)

**Linking the Oil and Gas Industry to Improve Cybersecurity LOGIIC**

Governing Board (M)

**ISA Global Cybersecurity Alliance ISAGCA**

Advisory Board (Q)

**ISA Security Compliance Institute ISCI**

Governing Board (M)

**ISA Wireless Compliance Institute WCI**

Governing Board (M)

# ISASecure Organization Structure

**Governing Board**

- **Technical Steering Committee (TSC)**
- **Marketing Committee**
- **Staff Support for**
  - Certifications
  - CB Management
  - Finance/Admin

- **Liaisons to Industry Groups & Other Orgs.**
- **Accreditation Bodies**
- **Certification Bodies**
- **Contractor Support for**
  - SME
  - Marketing
  - Website

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# ISASecure Governing Board

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┌─────────────────────────┐
│         Chairman         │
│  Kenny Mesker, Chevron   │
└─────────────────────────┘
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| Vice-chairman Brandon Price ExxonMobil | Marketing Chairman Dan Desruisseaux, Schneider Electric | Technical Chairman John Jilek Johnson Controls Inc. |
|---|---|---|

## Governing Board Companies

| | |
|---|---|
| Chevron | ExxonMobil |
| Honeywell | Johnson Controls, Inc. |
| Saudi Aramco | Schneider Electric |
| Yokogawa | ISA99 Committee Liaison-Eric Cosman |

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# ISASecure Staff Support Team

Andre Ristaino
Managing Director

Mike Brazda
Operations and Marketing
Support Manager

Carol Muehrcke
Technical Project Manager

Johan Nye, Pierre Kobes, Hal Thomas, Kevin Staggs
Project Consultants-contract SME's

Melanie Swiderek
Technical Writer

Accreditation Body and
Certification Body Network
15+ Organizations

Liaison Organizations
- ISA99
- OPAF ISASecure Testing
- Building Cybersecurity (BCS)
- ISAGCA

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# ISASecure Supporters

# Current ISASecure Certification Coverage for ISA/IEC 62443

Asset Owner – Leverage Standards:

- Part 1-1 – Concepts and models
- Part 2-1 – Security program requirements
- Part 2-2 – Security protection rating
- Part 2-3 – Patch management
- Part 3-2 – Risk assessment and system design

Maintenance Service Provider – Leverage Standards:

- Part 1-1 – Concepts and models
- Part 2-4 – Service providers

Integration Service Provider - Leverage Standards:

- Part 1-1 – Concepts and models
- Part 2-4 – Service providers
- Part 3-2 – Risk assessment and system design
- Part 3-3 – System requirements and security levels

Product Supplier - Leverage Standards:

- Part 1-1 – Concepts and models
- Part 3-3 – System requirements and security levels
- Part 4-1 – Security development lifecycle
- Part 4-2 – Component requirements

**Asset Owners**
**Operate and Maintain Site Specific Systems**

**Integrators/Asset Owners**
**Engineer and Integrate COTS into Site Specific Systems**

**Product Suppliers**
**Design and Manufacture COTS Control Systems**

Current Certification Scope

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# ISO 17011 Accreditation Bodies Supporting ISASecure Certification Scheme

1. ANSI/ANAB-North America, Global

2. DAkkS-Germany

3. Japan Accreditation Board-Japan

4. RvA Dutch Accreditation Council – Netherlands

5. Singapore Accreditation Council - Singapore

6. Standards Council of Canada

7. Taiwan Accreditation Foundation

# ISO 17065 Certification Bodies with ISASecure CB Agreements

| Certification Body | Geographic Coverage | Accreditation Status |
|---|---|---|
| CSSC | Japan | Accredited |
| Exida | USA / Global | Accredited |
| TUV Rheinland | Germany / Global | Accredited |
| FM Approvals | USA / Global | Accredited |
| TUV SUD | Singapore / Global | Accredited |
| BYHON | Italy / Global | Accredited |
| Bureau Veritas | Taiwan / Global | In progress |
| Applied Risk | Netherlands / Global | In progress |
| TrustCB | Netherlands / Global | In progress |
| DNV | Singapore / Global | In progress |
| | | |

# ISASecure Certifications CY2020

**SDLA – Development Lifecycle Certification**
**ISA/IEC 62443-4-1**

1. Emerson Austin, TX
2. Emerson Pittsburgh, PA
3. Emerson Manilla, Philippines
4. ABB Cleveland, OH
5. ABB San Jose, CA
6. ABB Malmo/Vasteras Sweden
7. Honeywell Process Solutions Companywide Phoenix, AZ
8. Johnson Controls Inc Companywide (Cork Ireland)
9. Wartsila Herndon, VA
10. Schneider Electric Lake Forest, CA
11. Schneider Electric Company Wide (Rueil-Malmaison, France)
12. Yokogawa Musashino Tokyo Japan
13. GE Power Conversion Rugby England

**SSA – System Certification**
**ISA/IEC 62443-3-3**

1. Emerson DeltaV

**CSA/EDSA – Component Certification**
**ISA/IEC 62443-4-2 & 4-1**

1. Honeywell PLC
2. Honeywell Safety Manager
3. Honeywell Safety Manager SC
4. Honeywell Control Edge RTU
5. GE Power Controller
6. ABB Controller
7. ABB Safety controller
8. ABB DCS Controller
9. Schneider Electric Triconex TCM
10. Schneider Electric Tricon Comm Module
11. Schneider Electric Tricon Comm Module 695
12. Wartsila Power Plant Controller

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# ISASecure Certifications CY2021

**SDLA – Development Lifecycle Certification**
**ISA/IEC 62443-4-1**

1. Emerson Power and Water Solutions
2. Moxa Inc
3. <mark>Hirschmann Automation and Controls</mark>
4. Molex
5. Yokogawa Electric Corporation

**SSA – System Certification**
**ISA/IEC 62443-3-3**

1. Schneider Electric EcoStructure Foxboro DCS

**CSA/EDSA – Component Certification**
**ISA/IEC 62443-4-2 & 4-1**

1. <mark>Johnson Controls Centrifugal Chiller Controller</mark>
2. Yokogawa Electric Corporation ProSafe-RS Lite L1CP471 Safety Control System
3. Schneider Electric Tricon/Tricon CX System
4. ABB AC 800M/AC800M HI DCS Controller / Safety Controller
5. Yokogawa Electric ProSafe-RS S2CP471 Safety Control System

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# ISASecure Certifications 2022 YTD

**SDLA – Development Lifecycle Certification
ISA/IEC 62443-4-1**

1. Otis elevator (2022)

**CSA/EDSA – Component Certification
ISA/IEC 62443-4-2 & 4-1**

1. Yokogawa Electric Centum VP CP471 DCS Controller (2022)

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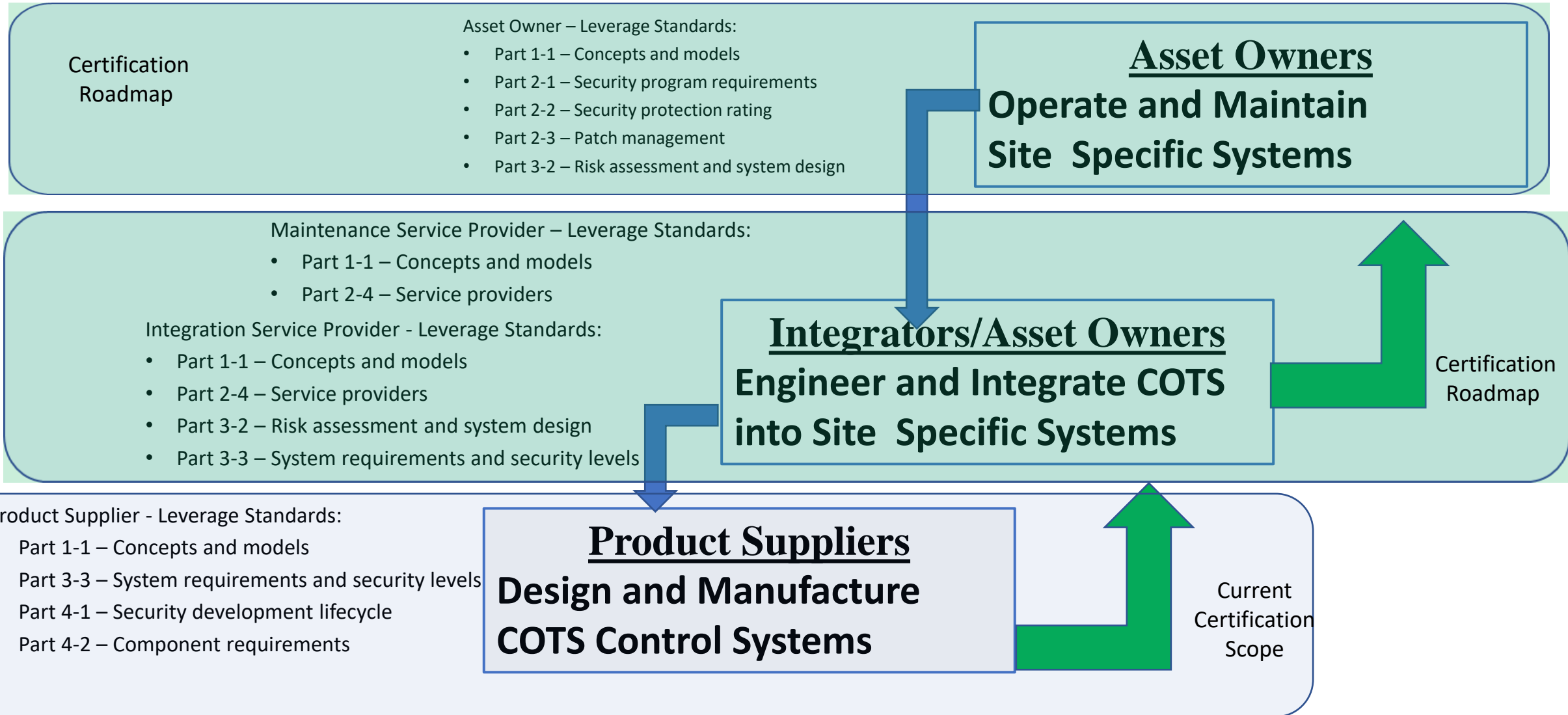
# ISASecure Certification Roadmap

**Current ISASecure Certifications**

1. Component Security Assurance:  ISA/IEC 62443-4-1, 4-2

2. System Security Assurance: ISA/IEC 62443-4-1, 3,3

3. Security Development Lifecycle Assurance: ISA/IEC 62443-4-1

**Certifications in Progress**

1. July 2022 – IIOT devices and gateway certification: ISA/IEC 62443-4-1, 4-2

2. July 2023 – Operating Site Assessment: ISA/IEC 62443-2-1, 2-4, 3-2, 3-3.

3. July 2023 – Service Provider Assurance: ISA/IEC 62443-2-4

4. Nov 2023 – IIOT solution certification (includes cloud provider).

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# ISASecure Roadmap will cover entire ISA/IEC 62443 series

Certification Roadmap

Asset Owner – Leverage Standards:

- Part 1-1 – Concepts and models
- Part 2-1 – Security program requirements
- Part 2-2 – Security protection rating
- Part 2-3 – Patch management
- Part 3-2 – Risk assessment and system design

## Asset Owners
### Operate and Maintain Site Specific Systems

Maintenance Service Provider – Leverage Standards:

- Part 1-1 – Concepts and models
- Part 2-4 – Service providers

Integration Service Provider - Leverage Standards:

- Part 1-1 – Concepts and models
- Part 2-4 – Service providers
- Part 3-2 – Risk assessment and system design
- Part 3-3 – System requirements and security levels

## Integrators/Asset Owners
### Engineer and Integrate COTS into Site Specific Systems

Certification Roadmap

Product Supplier - Leverage Standards:

- Part 1-1 – Concepts and models
- Part 3-3 – System requirements and security levels
- Part 4-1 – Security development lifecycle
- Part 4-2 – Component requirements

## Product Suppliers
### Design and Manufacture COTS Control Systems

Current Certification Scope

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# Collaborating with Building Cybersecurity (BCS)

BCS is establishing a certification for the 'as built' real estate market certifying building technology in real estate assets, starting with office buildings and expanding into other structures such as hospitals, stadiums, etc.

- Will be offered under the BCS brand

- ISCI is supporting the initiative along with NEMA, CIS and others.

- BCS is currently doing field trials on the assessment specification.

- ISA/IEC 62443-2-1, 2-4, 3-2, 3-3 and other industry relevant standards. More to come in an upcoming press release.

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# Collaborating with ISA Global Cybersecurity Alliance (ISAGCA)

- IIOT Devices study – published, available for download

- IIOT Systems study – July 2022

- ISA/IEC 62443 xref study, NIST CSF, ISO 2700x, others

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# ISA Offers World Class ISA/IEC 62443 Training and Certification
## Over 3100 students trained in 2021
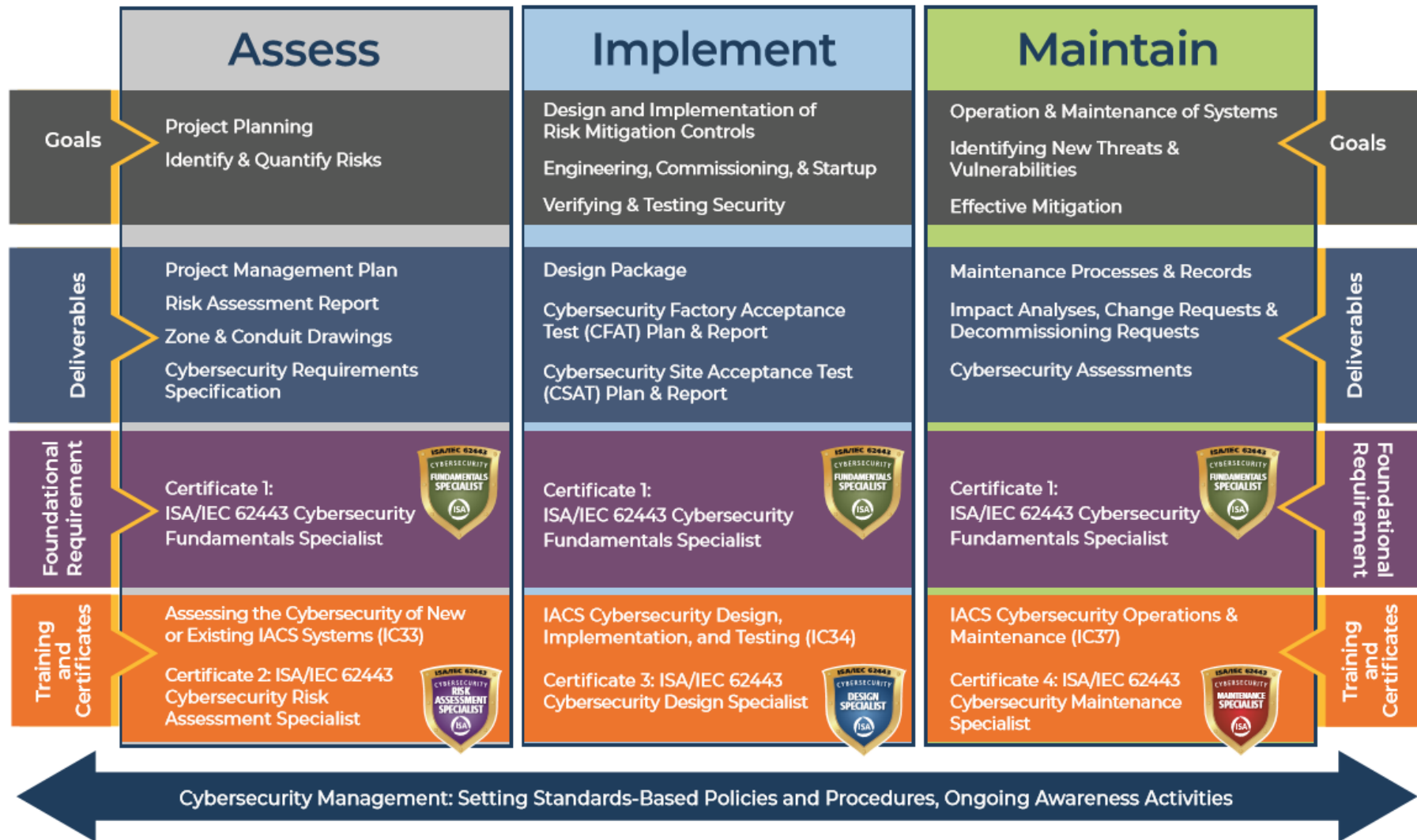
# *NEW* ISASecure for Product Suppliers and Assessors (IC47)

Contact ISA Training to Register

**Length:** 3 days, first class April 2022

**CEU Credits:** 2.1 (ISA is authorized by IACET to offer 2.1 CEUs for this program.)

**Certification of Completion:** A certificate of completion indicating the total number of CEUs earned will be provided upon successful completion of the course.

# Description

Certification and assessment programs for ISA/IEC 62443 are growing (ISASecure, IECEE, others). There is a need for training programs because there is a lack of understanding of the ISA/IEC 62443 standards in the **product supplier community** and a **shortage of assessors** with the requisite knowledge to perform certifications and assessments. This course is intended to **train product suppliers** on how to design, develop, and support IACS products, and **train assessors** on how to certify and assess IACS products and security development lifecycles using the ISA/IEC 62443 series of standards.

# New ISCI Member Benefit-Discounts for ISA Training

1. Visit the 'Learning' page on the www.isasecure.org website to get a discount code for ISA Cybersecurity training. Use the ISASecure discount code and follow the links to the www.isa.org training signup web page.

ISA Training volume discounts *are now extended to ISCI members*.  Details about the volume discount offering will be added to the ISASecure website.

Please contact Matt Rothkopf, Manager, Learning Consultation +1 (919) 990-9403.

| Number of Seats | List Price (Per Seat) | Supporters | |
|---|---|---|---|
| | | % Discount | Price (Per Seat) |
| 5–25 | 2,000 USD | 25% | 1,500 USD |
| 26–50 | 2,000 USD | 30% | 1,400 USD |
| 51–100 | 2,000 USD | 35% | 1,300 USD |

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# ISASecure Annual membership fees

**Strategic Member (voting-governing board level)**
- ❑ **$50,000**

**Technical Member (voting-technical level)**
- ❑ $20,000 (Annual Revenues over $500 million)
- ❑ $10,000 (Annual Revenues under $500 million)
- ❑ $5,000 (Annual Revenues under $50 million)
- ❑ $3,000 (Annual Revenues under $5 million)
- ❑ $5,000 (Certification Body)

**Associate Member (non-voting)**
- ❑ Government Agency/Industry Group/Other $5,000
- ❑ Individual $500

**Adopter/Supporter Member (non-voting)**
- ❑ $2,500 (Annual Revenues over $500 million)
- ❑ $1,500 (Annual Revenues under $500 million)
- ❑ $750 (Annual Revenues under $5 million)

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# Cybersecurity Resources at ISA

ISASecure product certifications – https://www.isasecure.org/en-US/

ISA Global Cybersecurity Alliance -  https://isaautomation.isa.org/cybersecurity-alliance/

ISAGCA Blogs (tons of great info and free downloads) - https://gca.isa.org/blog

ISA/IEC 62443 Training - https://www.isa.org/training-and-certification/isa-training

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*Elevating OT cybersecurity from an art, to a science, to an engineering discipline*