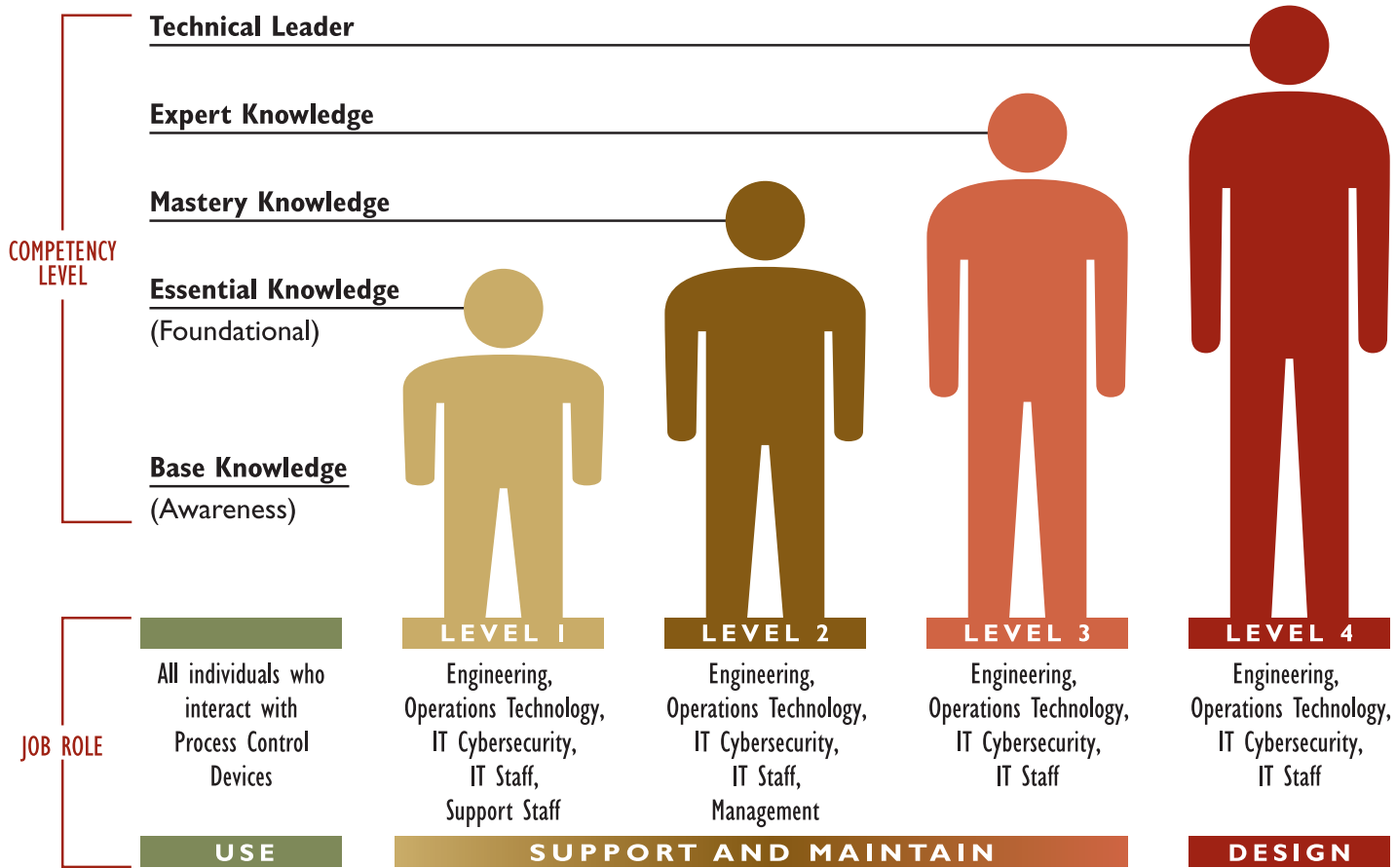


ICS-Related Job Role Mapping



Job Role Groupings

Engineering

- Process Engineer
- Electrical, Controls, and Mechanical Engineer
- Project Engineer
- Systems and Reliability Engineer
- OT Developer
- PLC Programmer
- Emergency Operations Manager
- Plant Networking
- Control/Instrumentation Specialist
- Protection and Controls
- Field Engineer
- System Integrator

Operations Technology

- Operator
- Site Security POC
- Technical Specialists (electrical/mechanical/chemical)
- OT Security
- ICS/SCADA Security
- ICS/SCADA Programmer

Management

- Plant Manager
- Risk/Safety Manager
- BU Management
- C-level Management

Support Staff

- Remote Maintenance & Technical Support
- Contractors (engineering)
- IT and Physical Security Contractor
- Procurement Specialist
- Legal
- Contracting Engineer
- Insurance
- Supply-chain Participant
- Inventory Management/Lifecycle Management
- Physical Security Specialist

IT Cybersecurity

- ICS Security Analyst
- Security Engineering and Architect
- Security Operations
- Security Response and Forensics
- Security Management (CSO)
- Audit Specialist
- Security Tester

IT Staff

- Networking and Infrastructure
- Host Administrator
- Database Administrator
- Application Development
- ERP/MES Administrator
- IT Management
- Architect

Job-Level Descriptions

LEVEL 1 **Essentials Knowledge**

- Has entry-level technical skill set
- Is capable of working under general supervision
- Requires significant day-to-day direction
- Has some tactical break/fix responsibilities

- An ability to satisfactorily complete technical training and related certifications
- Contributes to a safe work environment
- Understands company standards and applicability to job role

LEVEL 2 **Mastery Knowledge**

- Demonstrates most characteristics of Level 1
- Demonstrates an ability to work under minimal supervision
- Demonstrates significant skills related to job-specific responsibilities

- Demonstrates an ability to address tactical break/fix situations
- Is proactive in identifying department technical needs
- Demonstrates an ability to manage small projects
- Demonstrates an ability to review and contribute to functional and/or technical specifications regarding business requirements
- Demonstrates an ability to develop application/system documentation
- Demonstrates good planning, organizational, verbal, and written communication skills
- Consistently contributes to team effectiveness and demonstrates concern for group success
- Is able to implement company standards as applicable to job role

LEVEL 3 **Expert Knowledge**

- Demonstrates most characteristics of Levels 1 and 2
- Has mastered skills related to specific job responsibilities
- Demonstrates strategic planning abilities
- Is capable of developing functional and/or technical specifications regarding business requirements
- Consistently prioritizes workload without management intervention

- Is considered by peers and leadership to be SME in working group
- Is proactive in identifying business/enterprise technical needs
- Has a history of developing strong working relationships with peers, leadership, and customers
- Demonstrates an ability and willingness to train/coach others
- Demonstrates ownership of systems and processes
- Is able to express complex technical concepts effectively
- Is able to work well with people from different disciplines with varying degrees of technical experience
- Is able to interpret and apply company standards as applicable to job role and technical environments

LEVEL 4 **Technical Leader**

- Demonstrates most characteristics of Levels 1, 2, and 3
- Understands the big picture and how actions affect other system interoperability
- Has excellent problem solving and decision-making skills without having all of the information
- Has knowledge of business purpose beyond own scope of responsibilities
- Demonstrates strategic-planning skills
- Demonstrates an ability to communicate with all levels of management and customers

- Has strong presentation skills
- Is able to manage large projects
- Demonstrates an ability to develop recommendations to address identified business issues
- Is able to direct other team member's daily activities

Competency-Level Descriptions

Base Knowledge (Awareness)

Training focuses on security behaviors for individuals who interact with, operate, or support Industrial Control Systems. Training program may introduce ICS, the risks or types of ICS attacks, basic system and network defenses and controls, as well as typical ICS governance and policy best practices. Program goal should change human behavior in an ICS environment and reduce risk.

Essentials Knowledge (Foundational)

Training program should provide a foundational set of standard skills and knowledge for industrial cybersecurity professionals. The training should ensure that the workforce involved in supporting and defending industrial control systems are trained to keep the operational environment safe, secure, and resilient against current and emerging cyber threats. Across a diverse audience, the training program should build a foundation and ensure workers at this level develop a common language in ICS, understand the underlying theories in ICS for safety and reliability, and provide an overview of the basic tools for industrial control system security in settings across a wide range of industry sectors and applications.

Mastery Knowledge

Training should be role specific and focus on individual and organizational needs to advance knowledge, skills, and ability in a specific field.

Expert Knowledge

Training should focus on coordinated response and improvement of team capabilities. This level is typically achieved in joint exercises and projects.

Technical Leader

Training should focus on management and technical team development as well as methods for interacting with other teams and communicating technical concepts to non-technical audiences.