

Industrial Control Systems Joint Working Group Workforce Development Subgroup Charter

1. PURPOSE

1.1 Purpose Statement

The Workforce Development Subgroup has been established by members of the Industrial Control Systems Joint Working Group (ICSJWG), a cross-sector sponsored joint working group operating under the auspices and in full compliance with the regulatory requirements of the Critical Infrastructure Partnership Advisory Council (CIPAC). The purpose of the ICSJWG as described in the ICSJWG charter is to facilitate the collaboration of control systems stakeholders to accelerate the design, development, and deployment of more secure control systems. Participants include international stakeholders, government, academia, owners/operators, systems integrators, and the vendor community. The Workforce Development Subgroup was formed to address challenges and priorities related to personnel awareness of cybersecurity issues within control systems environments and development of skills for more effective cyber risk management.

1.2 Challenges

Traditional workforce development programs have focused on either industrial control systems skills or information technology security. Unfortunately, education and training programs are insufficient to the workforce to effectively manage cyber risk in control systems environments.

1.3 Objectives

The Workforce Development Subgroup will identify existing industrial control systems security curricula and make recommendations to enhance or create a new curriculum. The subgroup will also evaluate certification programs for control systems security professionals and work to develop an outreach plan for the control systems security workforce.

2. OPERATING PRINCIPLES

The operating principles define and set forth how the group will operate including the authorities, duration, member roles and responsibilities, and the procedures it will follow to accomplish its purpose(s). The overarching ICSJWG statutes, requirements, and objectives as outlined in the ICSJWG charter will apply to and govern this subgroup.

2.1 Sponsorship and Authorities

The Workforce Development Subgroup is sponsored by the ICSJWG, and the subgroup derives its authority from

both the ICSJWG charter and this subgroup charter. The requirements, stipulations, and authorizations of the ICSJWG charter are passed down and applicable to the members of this subgroup and its operation.

2.2 Subgroup Duration

The Workforce Development Subgroup initial period of performance will be 1 year from the date of execution of this charter by the ICSJWG and subgroup co-chairs. At the end of 1 year, the subgroup co-chairs and voting members may choose to extend the period of performance upon approval of ICSJWG co-chairs. The period of performance also may be terminated prior to the 1-year period if deliverables are completed and/or the ICSJWG Co-Chairs agree to dissolve the subgroup.

2.3 Membership

The ICSJWG is a collaborative and coordination body operating under CIPAC regulations. Members of the ICSJWG and attendees invited to participate as subject matter expert (SME) members derive no authority because of their participation in ICSJWG activities. Members of the subgroups will be selected from ICSJWG membership and from industry SMEs as follows:

2.3.1 Subgroup Co-Chairs

The subgroup will be lead by two subgroup co-chairs, one from the Sector Coordinating Council membership and one from the Government Coordinating Council membership as nominated by the ICSJWG and approved by the ICSJWG co-chairs. The two subgroup co-chairs shall act for the duration of this charter unless it is deemed necessary by the ICSJWG or co-chairs to nominate and appoint new subgroup co-chairs.

2.3.1.1 Subgroup Co-Chairs Roles and Responsibilities

- Draft, approve, and sign the subgroup charter with concurrence of the ICSJWG co-chairs.
- Recommend and vet subgroup membership and participant requests.
- Maintain the charter and ensure compliance by the subgroup membership and participants.
- Assign members and participants to perform specific tasks to complete the scope, deliverables, and products of the subgroup.
- Arrange and conduct meetings including documenting subsequent meeting minutes.



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- Ensure that all meeting minutes are distributed to the subgroup membership, the ISCJWG co-chairs, and to the ICSJWG program office at icsjwg@dhs.gov.
- Review and approve products and deliverables with a simple majority concurrence of the subgroup membership.
- Report or provide status updates on the progress of the subgroup deliverables.
- Present deliverables and products to the ICSJWG co-chairs for acceptance.
- Recommend and perform updates to the goals and milestones of this charter as needed (with the approval of the ICSJWG co-chairs).
- Perform other duties as requested by the ICSJWG co-chairs.

2.3.2 Members

The subgroup will have at least three members in addition to the co-chairs. Members will be selected from the ICSJWG membership and from SMEs in academia, government, and industry based on their ability to contribute to the completion of the goals and milestones of the subgroup. The subgroup will endeavor to ensure that its membership is representative of the various critical infrastructure and key resource sectors as identified and recognized by the National Infrastructure Protection Plan.

Business of the subgroup will be conducted with a simple majority when voting is needed to resolve issues. The subgroup co-chairs will have the authority to break a tie. Members will assist with the development and approval of the products and deliverables of the subgroup.

2.3.2.1 Members Roles and Responsibilities

- Complete tasks as assigned by the co-chairs.
- Attend meetings of the subgroup.
- Review and provide comments on products and deliverables.
- Vote on approval of products and deliverables.
- Comply with this charter and the regulations set forth in the ICSJWG charter.
- Ensure that the ICSJWG program office (icsjwg@dhs.gov) is copied on all written correspondence related to this subgroup.

2.3.3 SME Members

The subgroup co-chairs and members may choose to invite SME members on a task-by-task basis (in accordance with the ICSJWG charter) to contribute to the development of products or assist with specific tasks based on their expertise.

2.3.3.1 SME Member Roles and Responsibilities

- Comply with this charter and the regulations set forth in the ICSJWG charter.
- Complete tasks as assigned by the co-chairs and members.
- Attend subgroup meetings, as invited.

2.3.4 Executive Secretarial Support

Upon request, DHS will provide executive secretarial support to the subgroup co-chairs to perform administrative functions such as arranging for phone conference bridges, taking meeting notes, and notifying subgroup members of upcoming events.

2.4 Communication Protocols

This section provides the details for generating, sharing, and recording information about the subgroup's efforts and accomplishments:

2.4.1 Meetings

The subgroup will hold regular meetings where members and/or relevant SME members are invited to attend and engage in the specific tasks and goals of this charter. The subgroup may meet in a manner and frequency, as approved by the subgroup co-chairs, that is most conducive to completing the deliverables, addressing matters within the scope of the charter, and providing progress on the goals and milestones.

Subgroup meetings may be called in accordance with the process identified in the ICSJWG charter, which includes the requirement to provide notice to the Designated Federal Official's (DFO) Compliance Liaison. All ICSJWG or subgroup meetings, conducted under the auspices of CIPAC, shall only be held when the CIPAC DFO designee, a DHS government official,^a is present.

a. The DFO's Designee, also called the DFO Compliance Liaison, is a DHS government official who has been trained and certified by the CIPAC DFO to monitor, report, and ensure the regulatory compliance of any meeting held under the auspices of CIPAC.

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If the subgroup meetings will or are expected to include both government and nongovernmental personnel and if the result will or might be characterized as a consensus endeavor, the meeting should be managed as a CIPAC meeting. Compliance for CIPAC regulatory obligations will be accomplished by DHS under the guidance of CIPAC DFO or the DFOs designee.

2.4.2 Agendas and Meeting Minutes

As directed by the subgroup co-chairs, an agenda will be prepared for each meeting to identify the topics for review and the desired outcome of the meeting. At the conclusion of a meeting, minutes will be prepared to document the names of those in attendance and the decisions and actions agreed to. The agenda and subsequent meeting minutes will be distributed to members of the subgroup, the two ICSJWG co-chairs, and icsjwg@dhs.gov.

2.4.3 Review and Approval Process for Products and Deliverables

The subgroup will develop a method for its members to review and approve the deliverables that are completed to meet the goals and milestones of this charter. Deliverables approved by the subgroup membership will be forwarded to the ICSJWG co-chairs for acceptance and presentation to the ICSJWG membership at large.

2.4.4 Correspondence

All correspondence associated with subgroup business will be courtesy copied to icsjwg@dhs.gov.

2.4.5 Confidentiality

Members of the subgroup will keep the business and proceedings of all subgroup meetings confidential and will not disclose any information to organizations or individuals outside the membership of ICSJWG without approval from the subgroup and ICSJWG co-chairs. Subgroup members, however, may discuss their roles and activities of the subgroup with their respective agencies or business units, provided such discussions are held as business sensitive.

2.5 Schedules and Reporting Progress

The subgroup will prepare and present progress reports at each ICSJWG general meeting or as directed by the ICSJWG co-chairs. The subgroup also will develop a schedule to identify each product or deliverable and the estimated dates for completing the milestones outlined in Section 3.0 of this charter.

3. OBJECTIVES, GOALS AND MILESTONES

3.1 Objective 1—Identify existing industrial control systems security curricula and make recommendations to enhance or create a new curriculum. Academic curriculum acts as the roadmap for students as they choose a career and enter the workforce as a professional with the most up-to-date instruction. Curriculum is continually updated as new information, both external and internal to academia, becomes available. Internal refers to research, studies, and evaluation; while external includes feedback from businesses, defining moments, or even crisis.

3.1.1 Goal 1: Review existing industrial control systems security curriculums at the PhD, masters, bachelors, and vocational and secondary education levels and identify any gaps.

3.1.2 Goal 2: Develop recommendations based on the gap analysis of industrial control systems security curriculum for implementation by academia.

3.2 Objective 2—Evaluate certification programs for control systems security professionals. Certification programs provide a variety of positive functions for any profession. As a certified practitioner, members will have the ability to network, pool resources, remain current with new trends and innovation, perform collaborative research, develop an ethical code, and ensure a common level of understanding.

3.2.1 Goal 1: Determine the need and feasibility of a certification program for control systems security professionals.

3.2.2 Goal 2: Develop proposed knowledge domain areas and sample questions for a certification program.

3.3 Objective 3—Evaluate and develop an outreach program. An outreach program is useful to help different organizations understand one another and learn how they can work together. Outreach programs also may be used to inform organizations of the importance of the subject matter as well as the benefits and consequences of subject awareness.

3.3.1 Goal 1: Develop a standard outreach presentation or message that can be delivered to a generic audience about control systems and control systems security professions.



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3.4 List of Key Milestones

Key Milestones	Description	Due Date
Control systems security workforce development gap analysis	Objective 1, Goal 1 and 2	120 days to 1 yr
Prepare results of a feasibility study for a certification program	Objective 2, Goal 1	90 days
Develop knowledge domain areas for certification program	Objective 2, Goal 2	120 days
Control systems security workforce outreach plan	Objective 3, Goal 1	120 days