



## **1. Purpose**

### **1.1 Purpose Statement**

The Workforce Development Subgroup was established by members of the Industrial Control Systems Joint Working Group (ICSJWG), a cross sector sponsored joint working group operating under the auspices of, and in full compliance with, the regulatory requirements of the Critical Infrastructure Partnership Advisory Council (CIPAC). The purpose of the ICSJWG, as laid out in the ICSJWG Charter, is to facilitate the collaboration of control systems stakeholders to accelerate the design, development, deployment, operation and maintenance 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 cyber security 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, but not their intersection. As such, there are insufficient education and training programs available to the workforce to effectively manage cyber risk in control systems environments.

### **1.3 Objectives**

The Workforce Development Subgroup will assess the current state of industrial control systems (ICS) security education and training and identify the mechanisms necessary to grow the ICS security workforce. To do this effectively, the subgroup will: identify the workforce competencies; establish a recommended professional development framework; evaluate existing training, certificate/certification programs, and formal education, for control systems security professionals; and develop an awareness plan to ensure effective communications of new and enhanced training and development opportunities for the control systems security workforce as a result of this national effort.

## **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). Note that 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 derives its authority from the ICSJWG charter and this subgroup charter, as approved. 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 one 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 members may choose to extend the period of performance upon approval of ICSJWG Co-Chairs. The period of performance may also be terminated prior to the one-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 members derive no authority as a result 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 led by two Subgroup Co-Chairs; one from the Sector Coordinating Council (SCC) membership, and one from the Government Coordinating Council (GCC) 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

Subgroup Co-Chairs will lead the group to ensure execution of the charter in accordance with the rules and authorities of the ICSJWG and the CIPAC. As such, the Co-Chairs are responsible for the following:

- 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.
- Establish Subgroup work processes including methods for attaining decisions.
- 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.
- Ensure that all meeting minutes are distributed to the subgroup membership, the ICSJWG Co-Chairs, and to the ICSJWG program office at [ICSJWG@dhs.gov](mailto:ICSJWG@dhs.gov).
- Review and approve products and deliverables
- 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), and obtain formal approval from 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 subject matter experts (SME) 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 (NIPP). 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.
- Follow established work procedures.
- 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](mailto: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 SMEs members are invited to attend to engage on the specific tasks and goals of this charter. The Subgroup may meet in a manner and frequency, as approved the Subgroup Co-Chairs, that is most conducive to completing the deliverables, addressing matters within the scope of the charter, and to status progress against 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<sup>1</sup>. All ICSJWG or Subgroup meetings, conducted under the auspices of CIPAC, shall only be held when the CIPAC DFO designee, a DHS government official, is present. If the subgroup meetings will or are expected to include both government and non-governmental personnel and if the result will or might be characterized as a consensus endeavor, the meeting should be managed as a CIPAC meeting, and compliance for CIPAC regulatory obligations will be accomplished by DHS under the guidance of CIPAC Designated Federal Official (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](mailto: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 which 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](mailto: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 may, however, discuss their roles within and activities of the subgroup with their respective agencies or business units, provided such discussions are held has business sensitive.

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<sup>1</sup> The DFO's Designee, also called the DFO's 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.



**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 will also 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**

To ensure the overall objectives of the Workforce Development Subgroup are met, the following goals and milestones will be addressed by the Sub-Group.

**3.1 Objective** – Create ICS security competencies including knowledge, skills and abilities (KSAs) based on existing and/or newly identified competency models, ICS security processes and workforce duties and tasks. These competency statements will be organized into a competency model to be referred to as the ICS Security Professional Development Framework (“Framework”). This Framework will be viewed as a “living document” and updated as needed.

**3.1.1 Goal 1** – Identify a high-level competency structure that provides sufficient flexibility in application.

**3.1.2 Goal 2** – Collect and/or write Generalized Work Activities (GWAs) and competency statements supporting the high-level competency structure. These competency statements to reflect KSAs needed to accomplish duties and complete tasks.

**3.1.3 Goal 3** – Organize the GWAs, competencies and KSAs within a Professional Development Framework (“Framework”) reflecting typical role areas (generalized) and proficiency requirements.

**3.2 Future Objectives.** Upon completion of the above objective, the Subgroup will set additional objectives and goals such as creation of a notional curricula for ICS workforce development based on this Framework and how to create national awareness for the Framework and training and education recommendations.

**3.3 List of Key Milestones:**

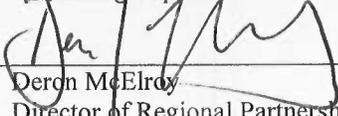
**Key Milestones Description Due Date**

Goal	Deliverable	Milestone
<b>3.1.1 Goal 1</b> – Macro Competency Model	Draft Competency Model.	60 days from date of this Charter
<b>3.1.2 Goal 2</b> - Competency Model	Competency model derived from multiple source information on ICS security practices and functions	90 days from completion of Goal 1
<b>3.1.3 Goal 3</b> Professional Development Framework	Integrated competency model identifying applicable role areas and proficiency requirements.	60 days after Goal 2



4. Signatures

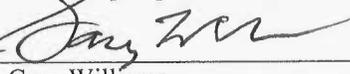
GCC Subgroup Co-Chair

  
Deron McElroy  
Director of Regional Partnerships  
Office of Cybersecurity and  
Communications, DHS

Date

OCT 16, 2012

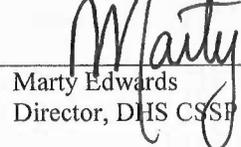
SCC Subgroup Co-Chair

  
Gary Williams  
VP Integrated Training Systems  
K2Share, LLC

Date

16 OCT 2012

ICSJWG GCC Co-Chair

  
Marty Edwards  
Director, DHS CSSP

Date

OCT 16, 2012

ICSJWG SCC Co-Chair

  
Tim Roxey  
Critical Infrastructure Protection,  
NERC

Date

16 OCT 2012