

# ICSJWG

## Workforce Development Subgroup

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ICSJWG Fall 2010 Conference

# Subgroup Mission

Address challenges and priorities related to personnel awareness of cybersecurity issues within control systems environments and the development of skills for more effective cyber risk management.

# Subgroup Goals/Objectives

- Identify existing ICS security curricula and make recommendations to enhance or create a new curriculum.
- Evaluate certification programs for ICS security professionals. Certification programs provide a variety of positive functions for any profession.
- Develop an outreach program. An outreach program is useful to help different organizations understand one another and learn how they can work together.

# Key Subgroup Deliverables

- Prepare a gap analysis of control systems security workforce capabilities and development opportunities
- Prepare a feasibility study for a control systems security certification program
- Develop knowledge domain areas for a certification program
- Develop a control systems security workforce outreach plan.

# Objective 1

- Identify existing ICS security curricula and make recommendations to enhance or create a new curriculum.
  - Objective 1 Milestones:
    - Review existing ICS curricula at PHD, Masters, Bachelor and Vocational and Secondary Levels
    - Develop recommendations based on gap analysis of ICS security curriculum for implementation by academia.

# Participation

## Individuals from a variety of stakeholder groups:

- AMTRAK
- CMS Energy
- Cyber Defense Institute Japan
- DHS
- Englobal
- Eastern Kentucky Power Cooperative
- Federal Energy Regulatory Commission
- George Mason University
- Harris Corporation
- ICF International
- Idaho National Labs
- Industrial Defender
- KTH University Sweden
- National Defense University
- OWL Computing
- San Antonio College
- Telvent
- University of Tulsa
- OWL Computing
- USAIEC Information Assurance Security Engineering Directorate
- Verizon
- Western Electric Coordinating Council

# Accomplishments

## Spring Conference 2010:

- Provided our research on Academic and Certification Programs/Courses

## Fall Conference 2010

- Developed an Organizational Framework
  - HSIN - information sharing, communication
  - Monthly Teleconference Sub-Group Meetings
  - Active engagement of small collaborative teams addressing specific sub-objectives.
  - Membership Drive

# Current work plan

1. Begin coordination and integration with external subgroups:
  - Vendor Sub Group (skills gaps)
  - Research Development Group (skill gaps)
2. Reach out to the Institute for Infrastructure Protection.
3. Coordinate with the International Subgroup

# Current work plan

4. Research and provide information to the working group on the Federal Government's effort (OPM & DHS) to create classifications, Job descriptions, etc. for the generic security workforce.
5. Research and provide information to the working group regarding a certification in SCADA Security (Exida and others). It falls in line with the CFSE & CFSP certification for individuals.

# Current work plan

6. Create a diagram of some sort that shows the path and career fields from high school graduate working as an apprentice or intern all the way to Plant Control Officer (or whatever the most senior ICS/PCS security person would be called in the Plant.) From there we will start dividing into technicians, engineers, managers, support, executives, etc.

# Current work plan

- 7 . Develop plan for moving forward on our Second Task: gap analysis. What is required, what best practices can our group employ and what is the final product? This should cover both certification and academic.

# Current work plan

8. Planning and design for three sets of curriculum:
  - Executives
  - Control System Engineers & Technicians
  - IT/Computer Science Personnel
  
9. White paper – Capture products and findings of the group. Provide overview of workforce training and certifications. Address the future.

# Next Steps

1. Increase membership
2. Continue to build small collaborative teams focused on specific sub-objectives.
3. Complete Objective 1 Milestone :
  - Review existing ICS curricula at PHD, Masters, Bachelor and Vocational and Secondary Levels
  - Develop recommendations based on gap analysis of ICS security curriculum for implementation by academia.

# Questions/Comments