

# **Process Control Systems Forum Research Interest Group**

**Dr. Ann Miller, Chair  
Spring Meeting, March 2007**

# Agenda

- ◆ **Welcome**
- ◆ **Introductions**
- ◆ **Charter Update**
- ◆ **Presentations of University Research**
- ◆ **Way Forward**

# Introductions

# Control Systems Research Interest Group

- **We are concerned with both basic and applied research in security methodologies and technologies related to control systems, including Supervisory, Control, and Data Acquisition (SCADA) systems and Critical Infrastructures. We span the full spectrum of security, including reliability, safety, dependability, and trustworthiness. As control systems are increasingly networked to other systems, their role in such network-centric systems or (system of systems) is critical. The increase in the number, sophistication, and speed of computer network attacks is an indication of the importance of the Process Control Systems Forum in general and in this Interest Group in particular. Thus, new approaches to vulnerability assessments, real-time monitoring, survivability and denial, and consequence management are sought. Further, the relatively new field of information forensics, or "infoforensics", of control systems is another area of interest. Lastly, the complexity of critical infrastructures yields inter-dependencies between component systems. Improved modeling and assessment of these inter-dependencies might yield new approaches to the prevention of cascading failures.**

# Goals

- ◆ **To improve linkages and collaboration among industry, government, and academia in process control systems research**
  - Share information on current and needed research
  - Document and publish to the Web site
  - Identify potential recipients who would find this information useful
- ◆ **Identify additional potential members**
  - Gather recommendations and document
  - Reach out to these people post-meeting to discuss objectives, their role and next steps
- ◆ **To be the “one-stop” shop for important reports and links to further information**
- ◆ **To host a workshop on PCS research results and trends**
- ◆ **To migrate to a Working Group**

# Process Control Systems Research Charter

- ◆ **Provide a forum for industry, government, and academia to discuss results, trends, and needs in process control systems research:**
  - Identify and promote research needs
  - Enable research
  - Connect teams
  - Perform gap analyses
    - This includes security, reliability, connectivity/reachability
    - This can include research into metrics or assessments in conjunction with other IG teams
  - Disseminate information through workshops and website

# PCSF Research IG Activity to Date

- ◆ Formed Interest Group 3/24/2005
- ◆ Held Interest Group Meeting at 2005 PCSF Spring Meeting in Dallas
- ◆ Generated website:  
<https://www.pcsforum.org/groups/65/>
- ◆ Held Interest Group Meeting at 2005 PCSF Fall Meeting
- ◆ Held Interest Group Meeting at 2006 PCSF Spring Meeting

# PCSF Research IG Next Steps

- ◆ Liaison with other groups
- ◆ Transition to working group status
- ◆ Update the website:  
<https://www.pcsforum.org/groups/65/>
- ◆ Team for collaborative discussion and research

<https://www.pcsforum.org/groups/65/>

- ◆ **Visit our website**
- ◆ **Share our website with your colleagues**
- ◆ **Improve our website:**
  - Provide links to your activities
  - Suggest improvements/additions
  - Other?

# Final Words before Discussion and Presentations

## ◆ 1985 baseball World Series, KC Royals vs. STL Cardinals.

- In game 6, an incorrect call by first base umpire was a deciding factor in that game and, probably, the series.
- We are all human and the real-time nature makes umpiring difficult, so the umpire's gross error is understandable.
- However, since then, the umpire has publicly stated "If it had been a random night in Milwaukee, no one would have cared".



# Final Words before Discussion and Presentations

- Process control systems are part of the critical infrastructures of all countries.
- In process control systems, what we do, even on a random night in Milwaukee or Atlanta, Memphis or Albany, Majorca or Albania , someone cares.
- Commitment is key; and that includes research as well as operations.

# Discussion

# Presentations