

# Beyond SCADA:

## Networked Embedded Control Systems

### Workshop Planning Meeting

The Embassy Suites Hotel  
Washington, D.C.

Tuesday, March 14, 2006

*(Breakfast on your own)*

8:00am–8:30am Registration

8:30am–8:35am Welcome

Dr. Shankar Sastry, University of California, Berkeley

8:35am–9:30am Government Perspectives

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8:35am–8:50am NCO/NITRD Introduction

Dr. Sally Howe, National Coordination Office

8:50am–9:20am The NITRD Program's High Confidence Software and Systems Coordinating Group Perspective

Dr. Helen Gill, National Science Foundation

9:20am–9:30am NITRD Agency Perspectives

Albert Wavering, National Institute of Standards and Technology

Dr. Brad Martin, National Security Agency

9:30am–9:45am Terms of Reference & Goals

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9:30am–9:45am Terms of Reference and Goals of the Workshop

Dr. Shankar Sastry, University of California, Berkeley

Dr. Bruce Krogh, Carnegie Mellon University

Dr. Marija Ilic, Carnegie Mellon University

9:45am–10:30am Keynote Address

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9:45am–10:30am SCADA Systems in Power: Issues and Opportunities

Dr. Felix Wu, University of Hong Kong and University of California, Berkeley

10:30am–10:45am Break (*light refreshments*)

10:45am–12:15pm	<b>Industry Perspectives</b>
10:45am–11:05am	<b>Review of the 2004 NSF SCADA Workshop</b> Dr. Kyle Nelson, Adventium Labs
11:05am–11:25am	<b>Standardization and Certification Issues (<i>tentative</i>)</b> Dr. Wayne Manges, Oak Ridge National Labs
11:25am–11:45am	<b>SCADA in the Process Control Industry</b> Dr. Peter Fuhr, Apprion
11:45am–12:15am	<b>Discussion led by Dr. Helen Gill, National Science Foundation</b>
12:15pm–1:15pm	<b>Lunch (<i>provided</i>)</b>
1:15pm–3:15pm	<b>Energy Systems</b>
1:15pm–2:15pm	<b>Power and Energy Systems</b>
1:15pm–1:35pm	Dr. Ralph Masiello, KEMA
1:35pm–1:55pm	Dr. Peter Sauer, University of Illinois, Urbana-Champaign
1:55pm–2:15pm	<b>Panel Discussion led by Dr. Maria Ilic, Carnegie Mellon University</b> Dr. Ralph Masiello, KEMA Dr. Peter Sauer, University of Illinois, Urbana-Champaign Dr. Felix Wu, University of Hong Kong and University of California, Berkeley
2:15pm–3:15pm	<b>Process Control and Energy Systems</b>
2:15pm–2:35pm	Dr. Kevin Staggs, Honeywell
2: 35pm–2:55pm	Dr. Alfonso Valdes, SRI
2: 55pm–3:15pm	<b>Panel Discussion</b> led by Albert Wavering, NIST Dr. Bruce Krogh, Carnegie Mellon University Dr. Kevin Staggs, Honeywell
3:15pm–3:30pm	<b>Break (<i>light refreshments</i>)</b>
3:30pm–4:30pm	<b>Systems Management</b>
3:30pm–4:30pm	<b>Building Management Systems</b> Dr. Clas Jacobson, United Technologies Research Center William Miller, MaCT
4:30pm–5:30pm	<b>Vulnerabilities of SCADA Systems</b> <b>Panel Discussion led by Shankar Sastry, University of California, Berkeley</b> Dr. Terry Benzel, University of Southern California Dr. George Cybenko, Dartmouth College Dr. Anthony Joseph, University of California, Berkeley Dr. Sean Smith, Dartmouth College

# Beyond **SCADA**:

## Networked Embedded Control Systems Workshop Planning Meeting

The Embassy Suites Hotel  
Washington, D.C.

Wednesday, March 15, 2006

*(Breakfast on your own)*

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| 8:30am–9:00am   | <b>OSD Perspectives</b><br>Dr. Robert Gold, Office of the Secretary of Defense   |
| 9:00am–10:00am  | <b>Networked Embedded Control Systems</b>  |
| 9:00am–9:20am   | <b>Networked Embedded Systems: Sensor Nets and Beyond</b><br>Dr. Shankar Sastry, University of California, Berkeley<br>Dr. Bruno Sinopoli, University of California, Berkeley  |
| 9:20am–9:40am   | <b>Perspectives in Distributed Control</b><br>Dr. Marija Ilic, Carnegie Mellon University  |
| 9:40am–10:00am  | <b>Control of Networked Embedded Systems: Closing the Loop</b><br>Dr. Panos Antsaklis, Notre Dame University<br>Dr. Bruce Krogh, Carnegie Mellon University  |
| 10:00am–10:15am | <b>Break</b> ( <i>light refreshments</i> )   |
| 10:15am–12:15pm | <b>High Confidence Systems Issues</b>  |
| 10:15am–10:45am | <b>Conceptual and Foundational Research Issues</b><br>Dr. George Cybenko, Dartmouth College  |
| 10:45am–11:15am | <b>Privacy and Security: Technology &amp; Challenges</b><br>Dr. Steve Wicker, Cornell University   |
| 11:15am–11:45am | <b>Dependability of SCADA Systems</b><br>Dr. William Sanders, University of Illinois, Urbana-Champaign   |
| 11:45am–12:15pm | <b>Panel Discussion led by Dr. Anthony Joseph, University of California, Berkeley/Terry Benzel, University of Southern California</b><br>Dr. Presanta Bose, Lockheed Martin<br>Dr. George Cybenko, Dartmouth University<br>Dr. Steve Wicker, Cornell University<br>Dr. William Sanders, University of Illinois, Urbana-Champaign |
| 12:15pm–1:15pm  | <b>Lunch</b> ( <i>provided</i> )   |

- 1:15pm–2:45pm**      **Model-based Design of Networked Embedded Systems**  
**1:15pm–1:45pm**      Dr. Gabor Karsai, Vanderbilt University  
**1:45pm–2:15pm**      Dr. Raj Rajkumar, Carnegie Mellon University  
**2:15pm–2:45pm**      **Panel Discussion** led by Dr. Jonathan Sprinkle, University of California, Berkeley  
Dr. David Corman, Boeing  
Dr. Gabor Karsai, Vanderbilt University  
Dr. Insup Lee, University of Pennsylvania  
Dr. Rick McGeer, HP Labs  
Dr. Raj Rajkumar, Carnegie Mellon University  
Dr. John Rushby, SRI
- 2:45pm–3:00pm**      **Break** (*light refreshments*)
- 3:00pm–5:30pm**      **Planning for the Final Workshop**
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- 3:00pm–4:00pm**      **Key research themes that need to be pursued to realize networked embedded systems for next generation SCADA/DCS**  
Discussion led by Dr. Bruce Krogh, Carnegie Mellon University
- 4:00pm–5:00pm**      **Research Priorities: Theory, Technology, Test beds, Roadmapping**  
Discussion led by Dr. Shankar Sastry, University of California, Berkeley
- 5:00pm–5:30pm**      **Discussion: Format for the Final Workshop**