



Wireless Grids Innovation Testbed (WiGiT)

6th Consortium Meeting
October 6, 2010

Syracuse Center of Excellence in Energy
and Environmental Systems (COE)



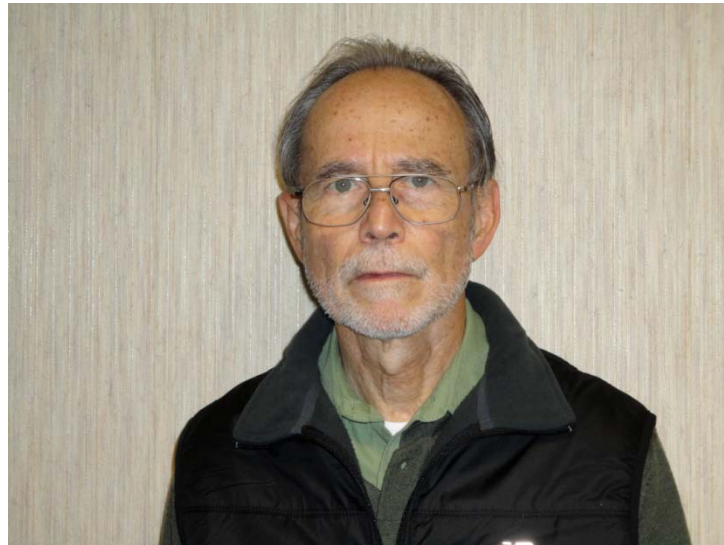
Welcome

Bruce Kingma, Associate Provost
(Syracuse University)



Fiber Optics

Dr. Carlos Hartmann,
Computer Science,
Syracuse University



WiGiT Open Specs & Publications Updates

Lee McKnight, Director,
Wireless Grid Lab,
(Syracuse University)



National Science Foundation Partnerships for Innovation
Wireless Grid Innovation Testbed (**#0227879** and **#0917973**)

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Syracuse Center of Excellence in Energy and Environmental Systems

WiGiT Open Specs & Publications Update

Lee McKnight

Wireless Grid Lab

School of Information Studies

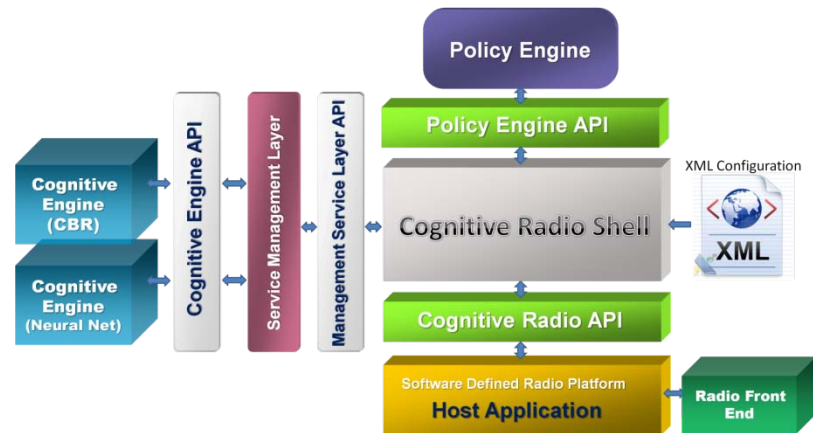
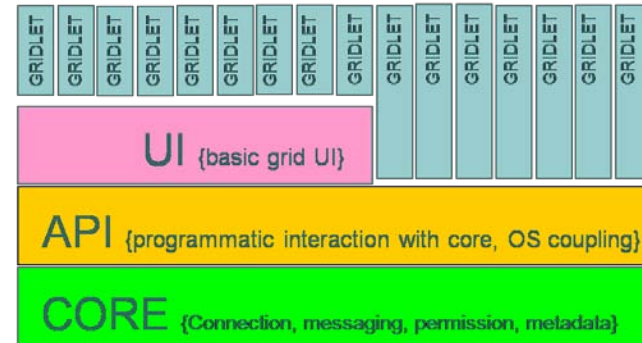
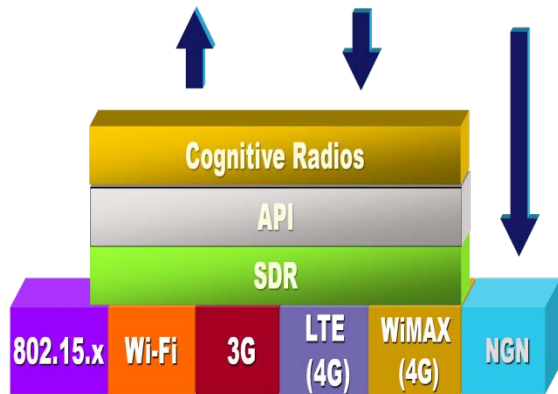
Syracuse University



Update

- WiGiT's Virtual Organization grows
 - Welcome Seneca Nation of Indians, RIT and CCNY
- Architectural Progress
 - Open Specifications 2011
- Publish Early and Often
 - Commercial & experimental results promising

WiGiT Open Specs 10.6.2010



Courtesy of WiGiT, WGC, and Wireless@Virginia Tech



Latest WiGiT Articles - For Partners Review Only

- Lee McKnight, Carlos E. Caicedo, Angela Ramnarine-Rieks and Joseph Treglia, ***'Towards Open Wireless Grids: Personal Cyberinfrastructure Specification by Innovation Testbed,'*** submitted to Ninth Annual IEEE International Conference on Pervasive Computing and Communications (PERCOM 2011)
- Joseph Vincent Treglia, Lee W. McKnight, Andreas Kuehn, Angela Usha Ramnarine-Rieks, Murali Venkatesh, Tamal Bose, ***'Interoperability by 'Edgware': Wireless Grids for Emergency Response,'*** Hawaii International Conference on System Sciences (HICSS 2011a)
- Angela U. Ramnarine-Rieks, Lee W. McKnight, Ruth V. Small, ***'Collaborative Learning Through Wireless Grids,'*** Hawaii International Conference on System Sciences (HICSS 2011b)
- Angela U. Ramnarine-Rieks, Lee W. McKnight, ***'Exploring Cyberlearning in Wireless Grids,'*** International Conference of Education, Research and Innovation (ICERI 2010)
- Lee W McKnight, Joseph Treglia, Andreas Kuehn, ***'Wireless Grids or Personal Infrastructure: Policy Implications of an Emergent Open Standard,'*** TPRC 38th Research Conference on Communication, Information and Internet Policy, (TPRC 2010)

Books in Press (Under Contract)

- *Virtual Markets and Wireless Grids: A WSPC Reference*
Lee W. McKnight (2011)
- *Virtual Markets and Wireless Grids in Entrepreneurial Ecosystems*
Lee W. McKnight, Craig Watters (2012)
- *Wireless Grid Edgeware and Gridlets: WiGiT Specifications and Applications*
Edited by ???, Lee W. McKnight (2013)



Innovation Partnership Summary: We Are Rocking!

- Publications & Funding
- Commercialization and Experimentation
- Education
 - We are all students of new phenomena



No Virtual Limits

Seneca Nation of Indians in WiGiT: Towards Sustainable Innovation & Job Creation

Gina Paradis
Director, Seneca Economic
Development Council

Craig Watters,
Managing Director of the
Falcone Center for
Entrepreneurship
(Syracuse University)



802.15.x & Neighborhood Notification System

Bahram Attaie,
Syracuse University

Dr. Myung Lee,
City College of New York,

Emergency Response & Information Security

Joe Treglia
PhD Candidate
Syracuse University



We-Jay & Magic Mirror Roll-out Update: WWE

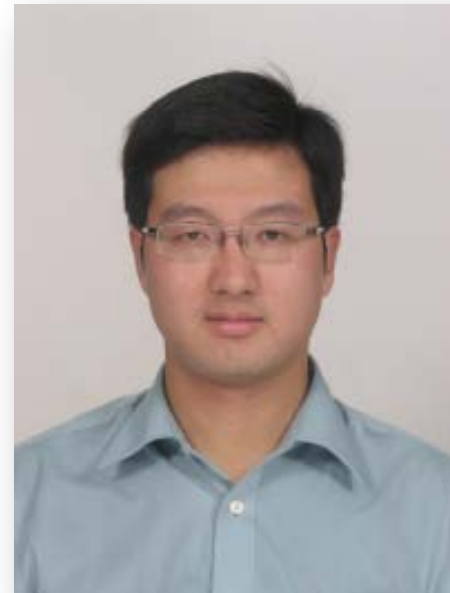
John Andrews, Wireless
Grids Corporation

Wireless Distributed Computing & Gaming

Tamal Bose,
Associate Director,
Wireless@VT
(Virginia Tech)



Xuetao Chen,
PhD Student
(Virginia Tech)



CORNET and WiGiT Demos

Tamal Bose, Xuetao Chen

10/06/2010



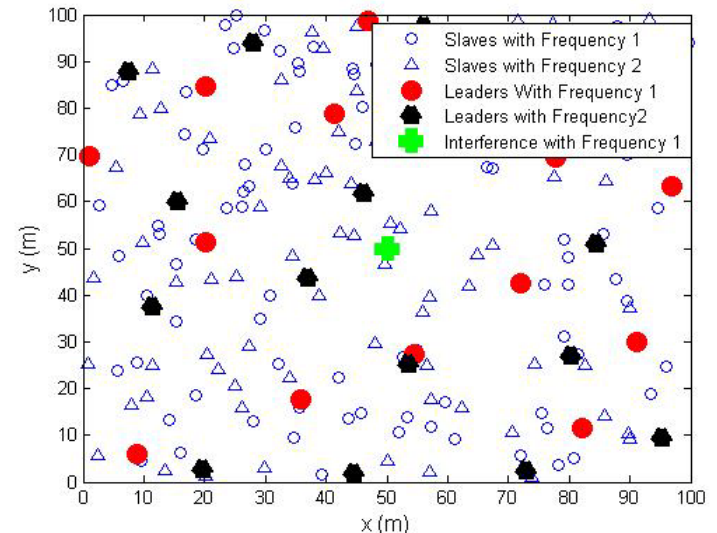
Demos for WiGiT

- Dynamic Spectrum Access
- Indoor Geolocation
- Wireless Distributed Computing
 - Video compression
 - Face recognition
- Wireless Grid Formulation

The screenshot shows two terminal windows side-by-side. The left window, titled 'Distributed One.', shows the execution of a video encoding command: `./lencod0.exe -p StartFrame=5 -p FramesToBeEncoded=5 -p InputFile="foreman_qcif.yuv" -p OutputFile="test0"`. The output indicates a completion time of 79 seconds. The right window, titled 'Centralized One.', shows the same command executed on a different machine: `./lencod0.exe -p StartFrame=0 -p FramesToBeEncoded=9 -p InputFile="foreman_qcif.yuv" -p OutputFile="test0"`. The output indicates a completion time of 313 seconds. Both windows show a warning about hierarchical coding and referenced B slices.

Distributed One. Time = 79 seconds

Centralized One. Time = 313 seconds



A Spectrum Sensing Experiment for Cooperative Learning

- Goal: Concepts of sensor networks. Current status and future of DSA technologies
- Play with CORNET- Basic concepts
 - Set up a transmitter (Tx) and several spectrum sensors
 - Recode RSSI and find out the factors that impact RSSI
 - Find a threshold to detect the presence of TX
 - How to improve the detection performance
- Searching and Thinking - Big picture
 - What are the important issues in the design of a spectrum sensing sensor network?
 - Is spectrum sensing necessary for white space and DSA?
 - Potential commercial success of DSA?

Thanks!

Questions or comments



Cyberlearning Wireless Grids: Undergraduate and High School & Universal Design

Dr. Ruth Small, Syracuse University

Sarah Chauncey, Syracuse University and BOCES

Dr. Anita Murphy, SCSD

Dr. Ken Slentz, SCSD

Dr. Joe Dragone, Superintendent of Schools

Eve Hill, Burton Blatt Institute

Dr. Meera Adya, Burton Blatt Institute (invited);

Dr. Scott Nicholson, Syracuse University (invited);

Dr. Peter Wong, Tufts University and Museum of Science Boston

Industry/Government/Academic/ Community Feedback

- Joshua A.T. Fairfield, Esq., Washington & Lee University Law School;
- Dr. Ed Lipson, SU
- Dr. Kevin Crowston, SU
- Kevin Lair, SU School of Architecture
- Dr. Marek Podgorny, SU CASE Center
- Sarah Hagelin, SU
- Dr. Derrick Cogburn, SU & American U; COTELCO
- Dr. John Chapin, MIT
- Dr. William Lehr, MIT
- Dr. Marvin Sirbu, CMU
- Dr. Frank Biocca, M.I.N.D. Lab Michigan State University
- Associate Dean Charles Spuches
- SUNY College of Environmental Science and Forestry
- Kashif Haq, Bighthouse Networks
- Dr. Ken Anderson, Intel
- Ahmed Sadek, Qualcomm
- Joel Delmonico, Clear Channel Radio
- Barbara Miller, Clear Channel Radio
- Neil Forster, Telecom New Zealand
- Dr. Tae Oh, Rochester Institute of Technology
- Dr. Edward Coyle, Georgia Tech
- Dr. James McKnight, Summerhill Biomass Systems

Summary and next steps

Tamal Bose,
Associate Director,
Wireless@VT
(Virginia Tech)



Lee McKnight, Director,
Wireless Grid Lab,
(Syracuse University)



Peter Wong,
Tufts University



End of Meeting

Thank you