NSF Workshop on a Wireless National Test Bed (WiNTeB)

May 5-6, 2010; at Hilton Hotel 950 North Stafford Street, Arlington, Virginia

There is a current and growing need for a Wireless National scale Test Bed (WiNTeB). WiNTeB could support research in application areas such as sensor nets, healthcare.

Possible WiNTeB Applications & Approach: Start with relatively simple and constrained experiments with application S/W in end user devices, moving from there as technical and operational procedures to protect the underlying networks are proven:

- Experimental applications that run on a range of existing devices
- Heterogeneous Networks - combining cellular, wireless broadband and GENI wired media
- Medical research involving large numbers of people with bio sensors tied to their cell phones
- Sensor Nets
- Mobile applications into a client side and a service side running in a compute cloud
- Overlay/mixed reality involving user interaction with synthesized environments
- Swarm behavior and co-ordination of actions between users across large gaps of time and space
- Smart Grid
- Collaborative Networking
- Dynamic Spectrum Allocation
- Ubiquitous Computing
- Infrastructure RAN & Backhual as technical and operational network safeguards are proven

One possible way of achieving this is by creating a non-profit Mobile Virtual Network Operator (MVNO) that would contract with wireless service providers to obtain access for researchers to national scale networks. This MVNO structure is currently well established in commercial applications, but has not been used to date for research infrastructure. WiNTeB will:

- Extend the limits of scope, geographic extent, size, and meaningfulness, of research results
- Lower the costs for large scale experiments
- Democratize research by making testing facilities available to a broader cross section of academia, industry and government
- Provide recent graduates the experience / knowledge needed to be productive in the larger wireless industry
- Improve network robustness, reliability, and security
- Accelerate innovation leading to advanced services for the public, industry, civil and military government
- Improve US industrial competitiveness.

Workshop Goal: To develop a common understanding amongst the stakeholders of what the benefits and challenges are in building WiNTeB. Stakeholders include:

- Academic researchers interested in using WinTeB for applications research, such as public health studies involving large numbers of people using cell phones equipped with bio sensors
- Academic researchers interested in using WinTeb to explore how to improve wireless networks
- Wireless service providers who might provide facilities for WinTeB under MVNO contracts
- Wireless equipment, software, semiconductor, and component companies who might want to perform experiments on WiNTeB
- Representatives of other government and industry organizations sponsoring research that might benefit from the availability of WiNTeB

The workshop will result in a report that will frame and guide efforts to create WiNTeB including recommendations to research agencies.

Workshop Attendance: to be limited to approximately 40 invited participants selected on the basis of a one page PDF description of themselves and why they should be part of the workshop sent with WiNTeB Workshop Application in the subject line to winteb@kennesaw.edu by March 29. Confirmation invitations will be returned by April 5. A few places may be kept for late applicants. NSF funding for the Workshop will not cover travel.

Additional Information: http://www.kennesaw.edu/ogc/WiNTeB.html

Workshop Organizers: Mark Cummings (Kennesaw State University), James Kempf (Ericsson Labs USA) with support from Chip Elliott and Aaron Falk (BBN/GENI). NSF funding pending.