Instructions for WMPG Workshop Attendees

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WMPG Workshop: High-Level Goals

- WMPG workshop aimed at:
  - Identify emerging wireless & sensor network requirements
    - Important new application scenarios
    - Protocol features necessary for efficient, robust and secure networking
    - End-to-end service features and how they differ from TCP/IP
  - Discuss architectural issues and identify promising approaches
    - IP evolution vs. disruptive approaches
    - Process for realizing future Internet protocol specification – research, standards, expt…
    - Innovative protocol ideas and architectural frameworks
  - Recommendations for experimental infrastructure and related research
    - What to build for MREFC?
    - Role of existing wireless testbeds in future GENI?
    - Identify key technologies, experimental platforms and system architecture
    - Programmability/flexibility and harmonization with wired network approaches
    - Experimental research priorities, NSF research agenda
  - Draft Report (in early Aug) to support MREFC process
WMPG Workshop: Agenda Overview

■ Day 1:
  - Keynote presentation by David Clark
  - NSF guidance on WMPG workshop objectives
  - WMPG vision and scope/objectives (D. Raychaudhuri and Mario Gerla)
  - Brief talks by attendees grouped into the following areas
    ■ Wireless, mobile, sensor network requirements
    ■ Internet architecture aspects
    ■ Emerging technologies and experimental infrastructure

■ Day 2:
  - Larry Peterson keynote talk on Internet Architecture and MREFC goals
  - Breakout sessions (3 groups) aimed at obtaining conclusions and recommendations. Initial drafting of workshop report sections.
  - Plenary session to review group recommendations
  - Continuation of report writing by volunteers
Some Questions for the Group on Wireless Requirements:

- 1. What are the top 5 driver applications for mobile/wireless/sensor?
- 2. What are the major new qualitative requirements not met by IP networks?
- 3. What implications do wireless scenarios have on end-to-end network models?
- 4. What are the quantitative or network performance implications, if any?
WMPG Workshop: Network Architecture Questions

- Some Questions for the Group on Network Architecture:
  - 1. Can IP evolve to meet emerging mobile requirements, or is there a real need for new architectures and protocols?
  - 2. If not IP, can we outline a possible end-to-end protocol architecture concepts?
  - 3. Will networks evolve towards multiple custom overlays vs. a single multi-purpose protocol?
  - 4. How would a proposed new network deal with router mobility? link impairments? cross-layer?
  - 5. How is location to be integrated into the networking framework, or should it be an overlay?
  - 6. How is content or context awareness to be incorporated, or should it be an overlay?
  - 7. Lessons learnt from active networks, ATM, ... on what not to do for a new network?
  - 8. Define concepts for the socket layer to replace TCP for mobile? for sensors?
Some Questions for the Group on Experimental Infrastructure:

- 1. What are the emerging wireless technologies with high impact on network design?
- 2. What wireless network platforms are available now, and which ones are suited for a potential new experimental infrastructure?
- 3. How is programmability and flexibility best included in a new experimental network?
- 5. Can wireless play a useful role in Internet infrastructure, and if so, spectrum requirements?
- 6. How would network measurements and management be implemented in a new experimental system?
- 7. Network deployment strategies, IP tunnels, virtualization, etc. - how do these work in the wireless edge network where resource partitioning may not be possible?
WMPG Workshop: Instructions for Participants

- Talks on day 1 should be kept to 10 slides/10 min, 2 min for Q&A
  - Focus on the topic before us (wireless/mobile requirements, future Internet, experimental infrastructure)
  - Stick to your main points and keep it brief!
  - Leave some time for Q&A
  - Time limit will be strictly enforced

- Workshop materials
  - Abstracts received available in your handout
  - Submit your slides and white papers at the earliest
  - All materials will be posted at www.winlab.rutgers.edu/wmpg
  - This will include meeting notes taken by student coordinators

- Aug 3 breakout sessions for reaching consensus on high-level recommendations and for writing draft report material
  - Follow instructions given by your session chair
  - State your opinions clearly, but be cooperative and avoid lengthy debates
  - Supply your input in the form of written material and drawings
  - Working groups aim for ~3-5 clear conclusions, backed up by ~1-2 pages of text and figures

- nsf_wmpg@winlab.rutgers.edu for broadcast to whole group