

Annex A – CROSS-LAYER WORKSHOP TECHNICAL PROGRAMME

NATO IST-030/RTG-012 INFORMAL WORKSHOP

**CROSS-LAYER ISSUES IN THE DESIGN OF TACTICAL
MOBILE AD HOC WIRELESS NETWORKS**

**Integration of Communication and Networking Functions
to Support Optimal Information Management**

Naval Research Laboratory
Washington, DC, USA
2-3 June 2004

(Click on the links below to view the presentations)

Wednesday, 2 June

- 0900 Welcoming Remarks
– Jeffrey E. Wieselthier, Workshop Chair, and John McLean, Superintendent, Information Technology Division, Naval Research Laboratory
- 0930 *Information Management in a Tactical Mobile Wireless Communications Environment*
– Allan Gibb, Defence R&D Canada – Valcartier, Canada
- 1045 *Keynote Presentation – Integrated Cross-Layer Protocols for Adaptive Transmission and Routing of Multimedia Traffic in Tactical Spread-Spectrum Networks*
– Michael B. Pursley, Holcomb Professor of Electrical Engineering, Clemson University
- 1300 Session 1
- Cross-Layer Design of Wireless Networks with Resource-Constrained Nodes*
– Andrea Goldsmith, Stanford University
- Delay-Energy Analysis of Wireless Networks*
– Shih Yu Chang, Achilleas Anastasopoulos, and Wayne Stark, University of Michigan
- Scheduling on a Channel with Time-Varying Capacity*
– Ashay Dhamdhere and Ramesh R. Rao University of California, San Diego
- Topology Management from Bottom to Top*
– Martha Steenstrup, Stow Research LLC and Clemson University
- 1445 Session 2
- Medium-Access Control Protocols for Heterogeneous Mobile Ad Hoc Networks with Directional Antennas*
– Daniel L. Noneaker and Harlan B. Russell, Clemson University

ANNEX A – CROSS-LAYER WORKSHOP TECHNICAL PROGRAMME

Cross-Layer Simulation and Aggregation Techniques for Wireless Ad Hoc Networks

- Vincent Gauthier, Monique Becker, André Luc Beylot, and Riadh Dhaou, Institut National des Télécommunications, Evry, France

Cross-Layer Optimization and Adaptation in Wireless Mobile Ad Hoc Networks

- Ashutosh Dutta, Raquel Morera, Tony McAuley, Nim Cheung, and Ken Young, Telcordia Technologies, Inc.

Interlayer Routing Issues for Wireless Networks

- Thomas R. Henderson, Marcelo Albuquerque, Phillip A. Spagnolo, and Jae H. Kim, Boeing

1615 Poster Session and Reception

Thursday, 3 June

0830 Session 3

Cross-Layer Design Issues for MANET Autoconfiguration

- Joseph P. Macker, Naval Research Laboratory

Attacks and Defenses Utilizing Cross-Layer Interactions in MANET

- John S. Baras and Svetlana Radosavac, University of Maryland, College Park

A Cross-Layer Diversity Technique for Multi-Carrier OFDM Multimedia Networks

- Yee Sin Chan, Pamela C. Cosman, Larry Milstein, University of California, San Diego

Balancing Transport and Physical Layers in Wireless Ad Hoc Networks: Jointly Optimal TCP Congestion Control and Power Control

- Mung Chiang, Princeton University

1015 Session 4

Cross-Layer Design for Data Accessibility in Mobile Ad Hoc Networks

- Klara Nahrstedt, University of Illinois at Urbana-Champaign

Adaptive Middleware for Challenged Networks

- Tom Ritter (FhG FOKUS, Germany) and Rudolf Schreiner (ObjectSecurity Ltd., UK)

Energy, Routing and Decentralized Detection in a Sensor Network

- Steven A. Borbash, Department of Defense/NSA; and Anthony Ephremides, University of Maryland, College Park

Cross Layer Design for Large Scale Sensor Networks

- Ananthram Swami, Army Research Laboratory

A Line in the Sand: A Wireless Sensor Network for Target Detection, Classification, and Tracking

- Anish Arora et al., The Ohio State University

1315 Panel Discussion – *Can Cross-Layer Techniques Enhance the Performance of Tactical Military Networks?*

Moderator: Jeffrey E. Wieselthier, Naval Research Laboratory

Panellists:

Andrea Goldsmith, Stanford University

Larry Milstein, University of California, San Diego

Klara Nahrstedt, University of Illinois at Urbana-Champaign

Raymond Pickholtz, George Washington University

Michael B. Pursley, Clemson University

Martha Steenstrup, Stow Research LLC and Clemson University

1600 Final Remarks and Discussion

1630 Workshop Close

POSTER SESSION

Efficient Message Authentication for Spread Spectrum Wireless Communications

– Charles Boncelet, University of Delaware; and David Carman, McAfee Research

Future Combat System Scalable Mobile Network Demonstration -- Tactical Mobile Ad-Hoc Networking Performance and Validation Results

– Wayne W. Brown, Vincent Marano IV, William MacCorkell, The Boeing Company; and Timothy Krout, Cengen, Inc.

Joint Iterative Decoding and Authentication

– David Carman, McAfee Research, Network Associates; Michael Jordan, The Johns Hopkins University Applied Physics Laboratory; and Charles Boncelet, University of Delaware

On the Use of Path Diversity with Bursty Channels

– Roch Guerin, University of Pennsylvania

Multipath Routing – A Cross-Layer Design Tool for QoS Provisioning in MANETs

– Zygmunt J. Haas, Cornell University

Support Multimedia SIP Applications over MANET Using Cross Layer Design

– Li Li and Louise Lamont, Communications Research Centre of Canada

Cross-Layering Approach for GPS-based Routing and Network Topology Construction

– Yibei Ling, Wai Chen, and Russell Hsing, Telcordia Technologies

Cooperative Diversity in Tactical Networks

– John M. Shea, Tan F. Wong, Yuguang Fang, Arun Avudainayagam, Wing Hin Wong, and Xin Li,
University of Florida

Cross-Layer Approach to Low Energy Wireless Ad Hoc Networks

– Geethapriya Thamilarasu, State University of New York at Buffalo; Sumita Mishra, CompSys
Technologies, Inc.; and Ramalingam Sridhar, State University of New York at Buffalo

Scaling Cooperative Diversity to Large Networks

– Matthew C. Valenti, West Virginia University

Energy-Aware Broadcasting and Multicasting in Wireless Ad Hoc Networks: A Cross-Layering Approach

– Jeffrey E. Wieselthier and Gam D. Nguyen, Naval Research Laboratory; and Anthony Ephremides,
University of Maryland