11th Annual Mediterranean Ad Hoc Networking Workshop

MED-HOC-NET 2012

"a pervasive, connected world, where distances shrink and (virtual) presence is everywhere"

Conference Program

Grecian Bay Hotel, Ayia Napa, Cyprus

June 19-22, 2012

University of Cyprus

IEEE

IEEE COMMUNICATIONS SOCIETY

11th IEEE Annual Mediterranean Ad Hoc Networking Workshop

June 19 - 22, 2012
Grecian Bay Hotel
Ayia Napa, Cyprus

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Visit to Ancient Settlement of Choirokitia and the Folk Village of Lefkara</td><td>Closing Session</td></tr>
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Program

Day One – Tuesday, June 19, 2012

8:00 – 11.00 Registration

11.00 – 12.30 TUTORIAL Part I

"**Inter-Vehicular Communication: Standards, Protocol Design, and Integrated Security Metrics**"
Claudio Casetti, Politecnico di Torino, Italy

12.30 Lunch

14.00 – 15.30 TUTORIAL Part II

"**Inter-Vehicular Communication: Standards, Protocol Design, and Integrated Security Metrics**"
Claudio Casetti, Politecnico di Torino, Italy

20:30 Cocktail Reception at Thalassa Museum

Day Two – Wednesday, June 20, 2012

8:00 – 9.00 Registration

9.00 – 10.30 Keynote Speech

Session Chair: Andreas Pitsillides, University of Cyprus, Cyprus

"Content Proliferation and Caching in Future Internet Architectures"
Prof. Leandros Tassiulas, Computer Engineering and Telecommunications, University of Thessaly, Greece and Center for Research and Technology Hellas

10.30 Coffee break

11.00 – 12.30 Session 1: Vehicular Ad-Hoc Networks

Session Chair: Geert Heijenk, University of Twente, Netherlands

A Map-Based Sensor Data Delivery Protocol for Vehicular Networks, *Sergio Martínez Tornell (Universitat Politècnica de València, Spain); Carlos T. Calafate (Universidad Politécnica de Valencia, Spain); Juan-Carlos Cano (Universidad Politecnica de Valencia, Spain); Pietro Manzoni (Universidad Politécnica de Valencia, Spain)*
A New Adapted Back-off Scheme for Broadcasting on IEEE 1609.4 Control Channel in Vanet *Abdel Mehsen Ahmad (Institut Telecom, France); Mahmoud Doughan (Institut Telecom, France); Imad Mougarbel (Institut Telecom, France); and Michel Marot (Institut Telecom, France)*
Dynamically Adjusting the Min-Max Contention Window for Providing Quality of Service in Vehicular Networks *Chrysostomos Chrysostomou (Frederick University, Cyprus); Constantinos Djouvas (Cyprus University of Technology, Cyprus); Lambros Lambrinos (Cyprus University of Technology, Cyprus)*

12.30 Lunch

14.00 – 15.30 Keynote Speech

Session Chair: Christos Douligeris, University of Pireaus, Greece

"A Path Toward Mobile Services in Vehicular Networks" *Prof. Carla-Fabiana Chiasserini, Telecommunication Networks Group, Politecnico di Torino, Italy*

20:30 Workshop Dinner

Day Three – Thursday, June 21, 2012

9.00 – 10.30 Session 2: MAC Protocols

Session Chair: Pietro Manzoni, Universidad Politecnica de Valencia, Spain

An Applicability Assessment of IEEE 802.11 Technology for Machine-Type Communications *Vitlay Petrov (Tampere University of Technology, Finland); Sergey Andreev (Tampere University of Technology, Finland); Yevgeni Koucheryavy (Tampere University of Technology, Finland)*
Radio Environment Map Based Architecture and Protocols for Mobile Ad Hoc Networks *Lorenzo Iacobelli (Thales, France); Pascale Fouillot (Thales Communications, France); Christophe J. Le Martret (THALES Communications, France)*
Collision Forecasting: A Low-Power MAC with Traffic and Power Shaping *János Sallai (Vanderbilt University, USA)*

10.30 Coffee break

11.00 – 12.30 Session 3: Routing Algorithms and Protocols

Session Chair: Vasos Vassiliou, University of Cyprus, Cyprus

A Group Dynamic Source Routing Protocol (GDSR) Using Passive Clustering for Wireless Mobile Ad Hoc Networks *Thuy Minh Pham (University of Ulsan, Korea); Chi Trung Ngo (University of Ulsan, Korea); Hoon Lawrence Oh (University of Ulsan, Korea)*
Adaptation Delay and Its Impact on Application Performance for TDMA Ad Hoc Networks *Jimmi Grönkvist (Swedish Defence Research Agency, Sweden); Jimmy Karlsson (Swedish Defence Research Agency, Sweden); Ulf Sterner (Swedish Defence Research Agency, Sweden); Jan Nilsson (Swedish Defence Research Agency, Sweden); Anders Hansson (Swedish Defence Research Agency, Sweden)*

Tree-forming schemes for Overload Control in Wireless Sensor Networks *Charalambos Sergiou (University of Cyprus, Cyprus); Vasos Vassiliou (University of Cyprus, Cyprus)*

12.30 Lunch

14:00 – 22.30 Cultural Visit -C**omplimentary excursion to Hirokitia (or Chirokitia) and Lefkara**

The Neolithic settlement of Choirokoitia, occupied from the 7th to the 4th millennium B.C., is one of the most important prehistoric sites in the eastern Mediterranean. Its remains and the finds from the excavations there have thrown much light on the evolution of human society in this key region. Since only part of the site has been excavated, it forms an exceptional archaeological reserve for future study. Lefkara (Greek: Λεύκαρα) is a village on the island of Cyprus famous for its lace, known as lefkaritika in (Greek: λευκαρίτικα) and silver handicrafts.

Day Four – Friday, June 22, 2012

9.00 – 10.30 Session 4: Modelling and Algorithmic Challenges

Session Chair: Chrysostomos Chrysostomou, Frederick University, Cyprus

Instantaneous Forwarding Capacity Under the SINR Threshold Interference Model *Jarno Nousiainen (Aalto University, Finland); Pasi Lassila (Helsinki University of Technology, Finland); Jorma Virtamo (Aalto University, Finland)*
Minimizing Interference in Unmanaged Environments of Densely Deployed Wireless Access Points Using a Graphical Game Model *Josephina Antoniou (Cyprus University of Technology, Cyprus); Vicky Papadopoulou (European University Cyprus, Cyprus); Lavy Libman (University of NSW, Australia); Andreas Pitsillides (University of Cyprus, Cyprus)*
Impact of the Range and Geometry Estimation in the Accuracy of the Passive TDOA Algorithm *Israel Martin-Escalona (Technical University of Catalonia, Spain); Francisco Barcelo-Arroyo (Universitat Politecnica de Catalunya (UPC), Spain); Enrica Zola (Technical University of Catalonia, Spain)*

10.30 Coffee break

11.00 – 12.30 Session 5: Mobile Applications and Security

Session Chair: George Pallis, University of Cyprus, Cyprus

Dynamic Link Adaptation Based on Coexistence-Fingerprint Detection for WSN *Charbel Nicolas (Télécom SudParis, France); Michel Marot (Institut TELECOM; Telecom SudParis, France)*
Help Me: Opportunistic Smart Rescue Application and System *Osnat (Ossi) Mokryn (Tel Aviv Yaffo Academic College, Israel); Dror Karmi (Tel Aviv jaffa College, Israel); Akiva Elkayam (Tel Aviv Jaffa College, Israel); Tomer Teller (Tel Aviv jaffa College, Israel)*
Mobile Social Network Based Trust Authentication *You Lu (University of California, Los Angeles, USA); Kuan-Hao Su (University of California, Los Angeles, USA); Jui-Ting Weng (University of California, Los Angeles, USA); Mario Gerla (University of California at Los Angeles, USA)*

12.30 Lunch

14:00 – 14.30 Workshop Closing

Keynote and Tutorial Details

KEYNOTES

"Content Proliferation and Caching in Future Internet Architectures"

Prof. Leandros Tassiulas, Computer Engineering and Telecommunications, University of Thessaly, Greece and Center for Research and Technology Hellas

Abstract: The proliferation of storage at routers and other parts of the network hierarchy in combination with a paradigm shift in the nature of internet traffic that is becoming primarily content triggered, motivate recent explorations for novel internet architectures that are better suited to the new reality. Storage allows replication of information anywhere in the network, generalizing the paradigm of content distribution networks while supporting novel information access modes. In this presentation will address issues of information replication in relation to content popularity and spatial distribution of demand while propose schemes for efficient content management in caching hierarchies. Then will consider flat network architectures motivated by adhoc networks and explore the effect of caching in the many-node regime. Certain information replication schemes will be presented that are asymptotically optimal. Their investigation in growing network sizes will reveal smoother scaling behavior than what has been observed for adhoc networks without caching.

"A Path Toward Mobile Services in Vehicular Networks"

Prof. Carla-Fabiana Chiasserini, Telecommunication Networks Group, Politecnico di Torino, Italy

Abstract: This talk provides thoughts on how wireless mesh networks and vehicular networks can be combined and exploited to support Internet-based services to mobile users. Based on the recent studies in these fields, we will try to assess how well the currently available approaches and solutions meet the challenges of satisfying the user needs. Key aspects addressed in this talk are the issues of how to avoid congestion of the radio channel and of how to evaluate the impact of mobile-to-mobile and mobile-to-infrastructure communications on the efficiency of data services. We will also present the results of field operational tests, and highlight open problems and future challenges.

TUTORIAL

"Inter-Vehicular Communication: Standards, Protocol Design, and Integrated Security Metrics"

Claudio Casetti, Politecnico di Torino, Italy

Abstract: In a first part, we investigate the requirements on IVC ranging from traffic information systems to safety applications with real-time communication constraints. Typical IVC approaches are introduced including fully distributed as well as infrastructure-based, and centralized 3G/4G solutions. Emphasis is laid on the most recent standardization activities in the DSRC/WAVE context. We continue to discuss relevant protocols and communication principles to provide detailed information on which communication methods can be applied and how IVC protocols are developed. We study ad hoc routing approaches and their limitations to cover wide areas as well as recent geo-routing and broadcast-based data dissemination techniques. The main focus, however, will be on recently developed beaconing approaches that can easily be built upon the IEEE 802.11p protocol standard. The second part of the tutorial will focus on Secure IVC. Relying on broadcast transmissions, IVC solutions are exposed to multiple threats. Attacks are not easily prevented because of the ephemeral nature of IVC links and the constant movement of vehicles, as well as by the stringent timing requirements of IVC applications. We discuss the vulnerabilities of IVC solutions in terms of identity management, message authentication/protection/consistency, privacy protection and in-vehicle security. This overview will provide attendees with the state of the art as well as the open challenges in the field of secure IVC.