Message from the Workshop Chairs

2nd IEEE International Workshop on Data Security and PrivAcy in wireless Networks (D-SPAN 2011)

As the organizing committee, it is our pleasure to present the proceedings of the 2\textsuperscript{nd} IEEE International Workshop on Data Security and PrivAcy in wireless Networks (D-SPAN), held on June 20, 2011, in Lucca, Italy. The goal of this one-day workshop, organized in conjunction with the 12\textsuperscript{th} IEEE WoWMoM 2011, is to exchange cutting-edge ideas for securing the next-generation wireless networks, systems and applications. The scope of D-SPAN includes a wide variety of topics, including security and privacy of data collection, transmission, storage, publishing, and sharing in wireless networks broadly defined – such as cellular and mobile ad hoc networks (MANET), vehicular ad hoc networks (VANET), cognitive and sensor networks – to applying data analytics techniques to address security and privacy challenges in these networks. D-SPAN provides a forum for academic and industry researchers to present research ideas that build bridges across three communities: wireless networks and databases, and security.

This volume includes all papers presented at D-SPAN 2011. With the help of the program committee, we selected 12 high-quality papers that represent a combination of submitted and invited submissions. The technical program consists of three sessions: Security in Wireless Sensor Networks, Wireless Security in Hostile Environments, and Security and Privacy for Networks Broadly Defined. To engage the participants beyond paper presentations, the program also includes an exciting panel session on an important topic: “Security and Privacy in Mobile Cloud Computing”.

D-SPAN’s success is impossible without the help and dedication of many individuals. Our sincere thanks are due to all authors for their submissions. We are also grateful to the program committee members and external reviewers for their hard work and commitment to quality. We are confident that you will find the program stimulating, insightful, and thought provoking. Finally, we also hope that everyone enjoys the workshop venue in the beautiful medieval city of Lucca!

Sajal K. Das
Refik Molva
General Co-Chairs

Guevara Noubir
Gene Tsudik
Nan Zhang
Program Co-Chairs
D-SPAN 2011 Workshop Organization

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Radha Poovendran, University of Washington, USA
Matthew Wright, University of Texas at Arlington, USA
Wei Yu, Towson University, USA
Sencun Zhu, The Pennsylvania State University, USA
Technical Program

Security in Wireless Sensor Networks

The Best Keying Protocol for Sensor Networks
Taehwan Choi and Hrishikesh B. Acharya (University of Texas at Austin, USA), and Mohamed Gouda (National Science Foundation, USA)

Energy-Efficient Provenance Transmission in Large-Scale Wireless Sensor Networks
S. M. Iftekharul Alam and Sonia Fahmy (Purdue University, USA)

Distributed Clone Detection in Wireless Sensor Networks: An Optimization Approach
Tamara Bonaci, Phillip Lee, Linda Bushnell, and Radha Poovendran (University of Washington, USA)

Introducing Epidemic Models for Data Survivability in Unattended Wireless Sensor Networks
Roberto Di Pietro and Nino Vincenzo Verde (Università di Roma Tre, Italy)

Wireless Security in Hostile Environments

Collaborative Jamming and Collaborative Defense in Cognitive Radio Networks
Wenjing Wang and Mainak Chatterjee (University of Central Florida, USA), and Kevin Kwiat (Air Force Research Laboratory, USA)

Optimal Selection of Sink Nodes in Wireless Sensor Networks in Adversarial Environments
Aron Laszka, Levente Buttyan, and David Szeszler (Budapest University of Technology and Economics, Hungary)

Detecting Malicious Nodes in RSS-Based Localization
Manas Maheshwari, Sai Ananthanarayanan, Arijit Banerjee, Neal Patwari, and Sneha Kumar Kasera (University of Utah, USA)

On Sampling Signal Strength for Localization Using a Directional Antenna
Yinjie Chen and Zhongli Liu (University of Massachusetts Lowell, USA), Yong Ding (Guilin University of Electronic Technology, China), and Xinwen Fu (University of Massachusetts Lowell, USA)
Security and Privacy for Networks Broadly Defined

Key Management in Distributed Online Social Networks
Felix Günther (Technical University - Darmstadt, Germany), Mark Manulis (CASED, Germany), and Thorsten Strufe (Technical University - Darmstadt, Germany)

A Privacy Mechanism for Mobile Commerce
Anil Kumar Chorppath and Tansu Alpcan (Technical University - Berlin, Germany)

Communication and Security in Random Intersection Graphs Models
Sotiris E. Nikoletseas, Christoforos Raptopoulos, and Paul Spirakis (University of Patras, Greece)

Privacy-by-Design in ITS Applications
Antonio Kung (Trialog, France), Johann-Christoph Freytag (Humboldt-University, Berlin), and Frank Kargl (University of Twente, the Netherlands)

Panel Discussions

Security and Privacy in Mobile Cloud Computing
Moderator: Sajal K. Das (National Science Foundation, USA)