CIS-TC Newsletter

Communications and Information Security Technical Committee

Issue 1 – December 2016

Officers:

Chair: *Xiaodong Lin*, Associate Professor - Faculty of Business and Information Technology University of Ontario Institute of Technology (Canada)

Vice Chair (Conference): *Abderrahim Benslimane*, Full Professor - Laboratoire Informatique d'Avignon University of Avignon (France)

Vice Chair (Publication): *Francesco Chiti*, Assistant Professor - Department of Information Engineering University of Florence (Italy)

Secretary: *Rongxing Lu*, Assistant Professor - Faculty of Computer Science, University of New Brunswick (Canada)

Representative for IEEE ComSoc Standards Board: *Neeli R. Prasad*, Founder and CEO, SPA Solutions LLC. (USA)

Representative for IEEE COMSOC Student Competition Committee: *Mohamed M. E. A. Mahmoud*, Assistant Professor Electrical and Engineering Department Tennessee Technological University(USA)

cistc@comsoc.org

http://cis.committees.comsoc.org/newsletters/

Contents

MESSAGE FROM THE CHAIR

Welcome to the December Issue of CIS-TC newsletter! This is our first issue after we are relaunching our newsletter. This month typically brings snow and cold, but also provides opportunities for friends and family gathering. While you enjoy your time with family and friends, I encourage you to spend some time in reading our December Issue. It is an entirely fresh perspective and a new look and really exciting when reading through it. Thanks to our newsletter Editor-in-Chief, Dr. Francesco Chiti, for his wonderful effort. Also, you may notice that many parts of our newsletter are waiting for more input and updates from you to make our newsletter look better.

On behalf of CIS-TC officers, best wishes to you, your families and friends for a healthy and joyful holiday season and a prosperous New Year 2017.

Sincerely,
Xiaodong Lin
Chair of CIS-TC

TECHNICAL RECOGNITION AWARD 2016

The Committee decided to give the CIS-TC Technical Recognition Award 2016 to Professor Wenjing Lou (Virginia Tech), for her contributions to Security and Privacy in Cloud Computing and Wireless Networks.

Prof. Lou has been awarded during the CIS-TC meeting held at ICC 2016 on May 25th, 2016 in Kuala Lumpur (Malaysia).

Wenjing Lou is a professor at Virginia Polytechnic Institute and State University. Prior to joining Virginia Tech in 2011, she was a faculty member at Worcester Polytechnic Institute (WPI) from 2003 to 2011. She received a Ph.D. in Electrical and Computer Engineering from University of Florida in 2003.

As a co-director of the Complex Networks and Security Research (CNSR) Laboratory at Virginia Tech, Prof. Lou leads research on wireless networks and cybersecurity. She is interested in complex cross-layer

optimization problems that exploring new performance limits at the network layer by exploiting advances at the physical layer. She is also interested in developing, implementing, and evaluating privacy protection techniques in networked information systems and cross-layer security enhancement in wireless networks, by exploiting intrinsic wireless networking and communication properties.

Prof. Lou is a Fellow of the IEEE. She is the recipient of five best paper awards and a recipient of the U.S. National Science Foundation CAREER award in 2008. At WPI, she was named Joseph Samuel Satin Distinguished fellow in 2006 and received the Sigma Xi Junior Faculty Research Award in 2009. At Virginia Tech, she was named a College of Engineering Faculty Fellow in 2014, and received the College of Engineering Dean's Award for Research Excellence in 2015.

Since August 2014, Prof. Lou has been serving as a program director at the US National Science Foundation (NSF). At NSF, her responsibilities include the Networking Technology and Systems (NeTS) program, a core program of the Computer and Network Systems (CNS) division within the Directorate for Computer & Information Science & Engineering (CISE), and the Secure and Trustworthy Cyberspace (SaTC) program, a cross-cutting security program led by CISE/CNS.

FORTHCOMING MEETING

The next IEEE CIS-TC meeting will be held during IEEE International Conference on Communications (ICC 2017) "Bridging People, Communities, and Cultures", 21-25 May 2017, Paris, France.

IEEE ICC 2017 will be held at Palais des Congrès - Porte Maillot, Paris, France, 21-25 May 2017. Located in the heart of the City of Lights, IEEE ICC 2017 will exhibit an exciting technical program, complete with 13 Symposia highlighting recent progress in all major areas of communications. IEEE ICC 2017 will also feature high-quality Tutorials and Workshops, Industry Panels and Exhibitions, as well as Keynotes from prominent research and industry leaders.

We are glad to invite all of you to our meeting.

SCANNING THE WORLD

"*SHIELD Project*"
Tommaso Pecorella, Laura Pierucci
University of Florence, Italy
http://shield.digitelitalia.com

The presence of increasing interconnections between the domestic networks of users and the big Internet is driving the need for high performance in Network Security optics and users' privacy. These needs are not fully met by existing systems for consumers and small businesses because (i) there is not enough integration between the different devices both Core Network and user network sides to guarantee security and privacy, (ii) there is no adequate transparency to the user, (iii) they are not sufficiently cost-effective, (iv) they are not adequate enough to manage a "smart" home network and (v) they do not allow customization bandwidth usage and security levels.

The SHIELD project, founded by the Tuscany Region, aims to design and develop a prototype communication system able to guarantee end-users high standards of Network Security, Privacy, Quality of Experience to the end user. The project team is composed by a Telecommunications System Integrator (Digitel), a Software House (DTS) and a Provider (albalog).

The project contains particularly innovative elements such as: (i) the integration in both directions of the Core Network and User Network equipment for security, and (ii) the development of a Security Gateway to deliver advanced features and information of User Network Sentiment to the Core Network and vice versa.

The project goals can be summarized as:

- The security requirements are identified for the end user in a typical scenario of smart home.

- Different heterogeneous devices such as sensing and actuating devices or PC or tables or smart phones need of the Internet connection.

- These devices can be connected by wireless or by cable links trough the gateway (named $SHIELD-HOME$) to the Internet connection provided by the ISP. Low-energy communications environments using IEEE 802.15.4 coexist with wireless devices connected by WiFi or Bluetooth technologies or fixed equipment connected by Ethernet cable.

- The main goal of this project is to define the security requirements for the entire network, local area network in the smart home and the core network of the ISP, with an exchange of information between the $SHIELD - HOME$ and $SHIELD - CN$ to detect occurring attacks which can reach both the operator side that the smart home side.

SHIELD

"defending your digital life".

Research, design, development and testing of a prototype communications system, able to guarantee high levels of network security, privacy and quality of experience, delivered to small business and home users, through the protection capabilities of data security and communications.

shield.digitelitalia.com

Le **ali** alle tue idee

With the contribution of:

Progetto approvato con DD n. 5906 del 20/11/2015 rif. 81 Reg/Bandi RSI 2014/12-15/fl