REPORT FOR IEEE COMSOC DISTINGUISHED LECTURER TOUR

DL: Andrei Gurtov, Linköping University, Sweden

Region: LA region 9

<17 May 2017>

I performed a distinguished lecture tour in IEEE Region 9 involving 3 different chapters. The title of my primary lecture was “Software Defined Mobile Networks: Beyond LTE Architecture", although two other lectures were also given according to request of organizers. Events were attended by 20-40 people including IEEE officers, local students and professionals. Before my lectures, IEEE in general and its local activities were presented by the organizers.

The 3 chapters involved in the tour along with the respective chapter chairs were:

IEEE Section Carribean, Puerto Rico, Mr. Luis Tatis

IEEE Subsection, Respublica Dominicana, Mr. David Lama

IEEE Section, Panama, Dr. Maytee Zambrano

Abstract: Software-Defined Mobile Networks

Software Defined Networking (SDN) and Network Function Virtualization (NFV) are some of the hottest new technologies shaping the future Internet and mobile networks. NFV & SDN World Summit 2017 attracted over 1500 attendees from 65 countries. SDN & NFV concepts are expected to play a key role in the next-generation wireless networks (5G). Two recent books on “Software Defined Mobile Networks (SDMN): Beyond LTE Network Architecture” and “A Comprehensive Guide to 5G Security” are edited lately for Wiley and Sons by the speaker. The goal of this lecture is to present an introduction to SDN origins, SDMN architecture, mobility, traffic management and deployment paths. Special attention is paid to evolution of security in cellular networks and plans for 5G security on user devices, core network and virtualized elements.

Abstract: Identity-Defined Networking

The current Internet networking is based on TCP/IP protocol stack that had not changed significantly for 40 years. If the future Internet-of-things and Industrial Internet would use the same model, the collapse is imminent due to widespread cybersecurity risks. Last year, we witnessed 1 Tbps Denial-of-Service attacks from hacked IoT devices, enough to take a small country out of Internet. A scanning study in Sweden revealed thousands of sensitive industrial devices open for attacks. Securing current networks using firewalls, segmentation and Virtual Private Networks (VPNs) is complex, costly and fragile. It requires plenty of manual configuration which is not sustainable in the long run. The root defect is the use of ephemeral identities such as IP and MAC addresses to define the policies. We describe a novel approach, based on cryptographic host identities and IETF Host Identity Protocol (HIP). With a help of centralized orchestration, it reduces network provisioning time, decreases costs, and reduces the attack surface. Identity-Defined Networking is a paradigm shift is cybersecurity which is gradually deployable to secure legacy and future networks.

Iternary:

29.4: train from Linkoping, flight departs from <Arlanda, Sweden>, arrives to <San Juan, PR> 30.4
30.4: slides preparation in <San Juan, PR> (travel through PR was needed for cheap flight tickets)
1.5: depart to Dominican R

2.5: Lecture in Dominican R.

Topic: “Identity-Defined Networking”

Hora: 6:30 PM

Lugar: Microsoft Dominicana, Torre Blue Mall, Ave. Winston Churchill #83, Santo Domingo, Rep. Dom.

http://sites.ieee.org/rd/eventos/charla-tecnica-identity-defined-networking/

3.5: Departure to Panama City

4.5 Lecture in Panama

Lecture: Security and Smartness for Medical Sensor Networks
Place: Universidad Latina de Panama, Ave. Ricardo J. Alfaro, Panamá
Date: May 04 at 6:30p.m. (45 minutes +15 min of Q&A)
Attendance: undergraduate students in biomedical and telecommunications engineering and local professionals.

5.5. Lecture #2 in Panama

Lecture: Software-Defined Mobile Networks
Place: Hotel Ejecutivo
Date: May 05, at 2:30 p.m. (2 hours)
Attendance: Local professionals and undergraduate students in Telecommunications.

6.5 Departure to <San Juan, PR> via Bogota

7.5 Arrival to <San Juan, PR>

8.5 Lecture in <San Juan, PR>

Time: 07:00 PM to 08:30 PM

Universidad Turabo

Rio Grande Road, Gurabo, Puerto Rico, United States 00777

Building: Electrical Engineering Department

Room Number: 2nd Floor EDI-248

https://events.vtools.ieee.org/m/44722

9.5 Departure from <San Juan, PR>

10.5 Arrival to <Arlanda, Sweden>, train to Linkoping city