

*The Electrical and Computer Engineering Program presents
ECEN Seminar Series*

On Network Softwarization

Prof. Tarik Taleb
Aalto University, Finland

Thursday, 7th April, 2016

12 – 1 PM

Lecture Hall 144

Light lunch will be served

The telecom industry keeps reinventing itself. Soon, the world will be experiencing the 5th generation mobile networks (5G), also referred to as beyond 2020 mobile communication systems. Major obstacles to overcome in 5G systems are principally the highly centralized architecture of mobile networks along with the static provisioning and configuration of network nodes built on dedicated hardware components. This has resulted in lack of elasticity and flexibility in deployment of mobile networks; rendering their run-time management costly, cumbersome and time-consuming. Software Defined Networking, Network Function Virtualization, and Cloud Computing, along with the principles of the latter in terms of service elasticity, on-demand features, and pay-per-use, could be important enablers for various mobile network enhancements, to specifically virtualize and decentralize mobile networks using general-purpose COTS (commercial of the shelf) hardware. For this purpose, different requirements have to be met and numerous associated challenges have to be subsequently tackled. This talk will touch upon the recent trends the mobile telecommunications market is experiencing and discuss the challenges these trends are representing to mobile network operators. To cope with these trends, the talk will then showcase the feasibility of on-demand creation of cloud-based elastic mobile networks, along with their lifecycle management. The talk will introduce a set of technologies and key architectural elements to realize such vision, turning end-to-end mobile networking into software engineering.



Prof. Tarik Taleb is an IEEE Communications Society (ComSoc) Distinguished Lecturer. He is currently a Professor at the School of Electrical Engineering, Aalto University, Finland. Prior to his current academic position, he was working as Senior Researcher and 3GPP Standards Expert at NEC Europe Ltd, Heidelberg, Germany. He was then leading the NEC Europe Labs Team working on R&D projects on carrier cloud platforms, an important vision of 5G systems. He was also serving as technical leader of the main work package, Mobile Core Network Cloud, in EU FP7 Mobile Cloud Networking project, coordinating among 9 partners including NEC, France Telecom, British Telecom, Telecom Italia, and Portugal Telecom. Before joining NEC and till Mar. 2009, he worked as assistant professor at the Graduate School of Information Sciences, Tohoku University, Japan, in a lab fully funded by KDDI, the second largest network operator in Japan. From Oct. 2005 till Mar. 2006, he worked as research fellow at the Intelligent Cosmos Research Institute, Sendai, Japan. He received his B. E degree in Information Engineering with distinction, M.Sc. and Ph.D. degrees in Information Sciences from GSIS, Tohoku Univ., in 2001, 2003, and 2005, respectively. Further details on Prof. Taleb are available at his website www.tariktaleb.info

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