**King Fahd University of Petroleum & Minerals**   
**College of Computer Sciences and Engineering**

**Computer Engineering Department**

**Visit Schedule of Dr. Tarik Taleb**

**May 5-8, 2013**

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|  | **9:00-11:00AM** | **1:00-3:00PM** |
| **Sunday May 5th** | Meeting with the **COE Chairman** | Informal discussion with **Undergraduate Students** on hot topics currently discussed in telecom standards bodies  ***(22-105)*** |
| **Monday May 6th** | **Seminar 1:** Mobile Operator Network Decentralization: Merits, challenges, & some Solutions  ***(TBD)*** | Meeting with **Graduate Students** to guide them in finding research topics of importance to industry  ***(22-401)*** |
| **Tuesday May 7th** | **Seminar 2:** Towards Carrier Cloud  ***(24-121)*** | **Seminar 3:** Wireless Technologies for Healthcare Services and for Assisting Elders at Home  ***(24-120)*** |
| **Wednesday May 8th** | Meeting with **Faculty members** to discuss research and educational topics. This includes possible research collaborations, IEEE-sponsored technical event organization, student exchanges, and other topics of mutual interest.  ***(22-105)*** | **Visit laboratories and on-going projects** |

**Seminar 1: Monday May 6, 2013 09:00 – 11:00**

**Title: Mobile Operator Network Decentralization: Merits, challenges, & some Solutions**

**Abstract:**

Today’s mobile networks are highly centralized, not optimized for high-volume data applications that shall come with 4G and beyond technologies. This highly centralized network architecture leads to high demand on central location due to “backhauling” of all data traffic. A straightforward solution to this issue may consist in having operators investing in speed, upgrading their core network nodes and building a scalable core network that can accommodate peak hours of these emerging bandwidth-intensive mobile applications. Whilst this is technically and technologically possible, it economically represents a significant challenge for operators, particularly due to the fact that the Average Revenues per Users are getting lower given the trend towards flat rate business models. Operators are thus investigating cost-effective methods for accommodating the increasing mobile network traffic with minimal investment into the existing infrastructure. Decentralizing the mobile network is one trendy solution; that will not be efficient without rethinking some existing communication protocols. This talk will touch upon the recent trends the mobile telecommunications market is experiencing, showcasing some of the emerging consumer products that are facilitating such trends. The talk will also discuss the challenges these trends are representing to mobile network operators and will enlist the merits of and the challenges behind mobile network decentralization. Some relevant solutions will be introduced and opportunities, in terms of defining new business models, will be also discussed.

**Seminar 2: Tuesday May 7, 2013 09:00 – 11:00**

**Title: Towards Carrier Cloud**

**Abstract:**

Mobile operators are in need of means to cope with the ever-increasing mobile data traffic, introducing minimal additional capital expenditures on existing infrastructures, principally due to the modest Average Revenues per User (ARPU). Network virtualization and cloud computing techniques, along with the principles of the latter in terms of service elasticity, on-demand, and pay-per-use could be important enablers for various mobile network enhancements and cost reduction. This talk discusses the recent trends the mobile telecommunications market is experiencing, showcasing some of the emerging consumer products and services that are facilitating such trends. The talk also discusses the challenges these trends are representing to mobile network operators. The talk also demonstrates the possibility of extending cloud computing beyond data centers towards the mobile end-user, providing end-to-end mobile connectivity as a cloud service. The talk introduces a set of technologies and methods for the on-demand provision of a decentralized and elastic mobile network as a cloud service over a distributed network of cloud-computing data centers; federated cloud. The concept of Follow-Me-Cloud whereby not only data but also mobile services are intelligently following their respective users is also introduced. The novel business opportunities behind the envisioned carrier cloud architecture and service are also discussed, considering various multi-stakeholder scenarios.

**Seminar 3: Tuesday May 7, 2013 13:00 – 15:00**

**Title: Wireless Technologies for Healthcare Services and for Assisting Elders at Home**

**Abstract:**

The current healthcare systems are undergoing a fascinating transformation to a ubiquitous wireless network-centric paradigm. The healthcare community is demonstrating a growing interest to leverage commercial Internet and wireless networking technologies in order to achieve this desired network-centric paradigm. Such a paradigm demands a robust, highly-capable, highly-interoperable, readily deployable and manageable, and secure networking capability to provide pervasive “anytime, anywhere” health-care communications. This talk first delineates the phenomenal advances in key wireless technologies in the recent era which have opened up revolutionary possibilities for delivering healthcare services. The talk then moves toward exploring unique challenges pertaining to designing and deploying pervasive healthcare systems. The talk then continues on describing one solution as a case studie, namely ANGELAH (AssistiNG Elders At Home). Through this case study, the talk discusses the issues of integrating heterogeneous wireless technologies and healthcare-specific functionalities. In particular, the talk points out the formation of ad hoc support groups to aid patients/victims who have succumbed to illnesses/accidents.

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| ***BIOGRAPHY***  Dr. Tarik Taleb is currently working as Senior Researcher and 3GPP Standards Expert at NEC Europe Ltd, Heidelberg, Germany. Prior to his current position 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 was working as research fellow with 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.  Dr. Taleb’s research interests lie in the field of architectural enhancements to mobile core networks (particularly 3GPP’s), mobile cloud networking, mobile multimedia streaming, congestion control protocols, handoff and mobility management, inter-vehicular communications, and social media networking. Dr. Taleb has been also directly engaged in the development and standardization of the Evolved Packet System as a member of 3GPP’s System Architecture working group. Dr. Taleb is a board member of the IEEE Communications Society Standardization Program Development Board. As an attempt to bridge the gap between academia and industry, Dr. Taleb has founded and has been the general chair of the “IEEE Workshop on Telecommunications Standards: from Research to Standards”, a successful event that got awarded “best workshop award” by IEEE Communication Society (ComSoC).  Dr. Taleb is/was on the editorial board of the IEEE Wireless Communications Magazine, IEEE Transactions on Vehicular Technology, IEEE Communications Surveys & Tutorials, and a number of Wiley journals. He is serving as vice-chair of the Wireless Communications Technical Committee, the largest in IEEE ComSoC. He also served as Secretary and then as Vice Chair of the Satellite and Space Communications Technical Committee of IEEE ComSoc (2006 - 2010). He has been on the technical program committee of different IEEE conferences, including Globecom, ICC, and WCNC, and chaired some of their symposia.  Dr. Taleb is the recipient of the 2009 IEEE ComSoc Asia-Pacific Best Young Researcher award (Jun. 2009), the 2008 TELECOM System Technology Award from the Telecommunications Advancement Foundation (Mar. 2008), the 2007 Funai Foundation Science Promotion Award (Apr. 2007), the 2006 IEEE Computer Society Japan Chapter Young Author Award (Dec. 2006), the Niwa Yasujirou Memorial Award (Feb. 2005), and the Young Researcher's Encouragement Award from the Japan chapter of the IEEE Vehicular Technology Society (VTS) (Oct. 2003). Some of Dr. Taleb’s research work has been also awarded best paper awards at prestigious conferences. Dr. Taleb is a senior IEEE member. |  |