Wireless Technologies and Applications

Wireless communication has exploded during the last two decades and today there are more than five billion mobile phone users around the Globe. However, much thanks to the introduction of smart phones, such as Iphones, mobile applications such as Facebook and Youtube, the number of mobile broadband users is expected to surpass one billion before the end of 2011.

Still we are just at the beginning of the wireless revolution. The industry believes that within the next decade the internet of things will take off and that before 2020 there will be some 50bilion "things" connected to the internet, most of them wirelessly. An example of such a system is the Smart Grid that describes the next-generation electrical power system that is built on the increased use of communications and information technology in the future generation, delivery and consumption of electrical energy.

Course Description

This course gives an overview of the basic radio technologies and systems deployed today in order to support this exploding demand for wireless communications. It also provides an overview of the applications and new services that drive the development of mobile broadband. In particular the course examines the various wireless standards used for voice, such as GSM, as well as the ones used for mobile data, including 3G, WiFi, WiMax, HSPA and 4G/LTE. Finally the course reviews some of the various applications that wireless communications can and may support, including apps for mobile broadband and machine-to-machine communications.

Course Objectives

After the course the students should be able to understand the basic principles of:

- Radio communications, multiple access and the cellular system
- The main Global standards for mobile voice, and mobile broadband systems (GSM, 3G, Bluetooth, WiFi, WiMax, HSPA and 4G/LTE)
- Applications for Smart Phones
- Operating systems (iOS, Android and Symbian)
- Application of wireless to M2M communication such as Metering and Smart Grids

Course Content

- Radio Communications systems
- The cellular system
- International regulations and standardization
- Mobile Telephony
- GSM/EDGE
- CdmaOne/cdma2000

- 3G/WCDMA/HSPA
- Applications for Smart Phones
- Android/iOS (iPhones)/Symbian
- M2M Communications
- Smart Grid communications

Who should attend?
This course is recommended for a broad audience, especially those with an engineering or technology background, or an appreciation of wireless communications engineering and practice. It is particularly aimed at professionals in the wireless community who does not have a specialized degree in electrical or computer engineering, or professionals in the financial-, utility- or service industry with a strong interest in wireless or mobile broadband applications. Potential attendees may be programmers, project and business managers, sales personnel, procurement staff, financial analysists and corporate executives.

Lecturers:
Claes Beckman (Course leader) and lecturers from Wireless@KTH and industry.

Practicalities:
Course Length: **3 days**
Course Language: **English**
Course fee: **SEK 16 900 excluding VAT**. The course fee includes course material, lunch, and refreshments.

Course dates for fall 2011: **22 - 24 Nov**
Course venue: **Electrum Kista, Stockholm.**

For more information, please send an e-mail to Project Manager Claes Beckman
To register, click here. Last registration date is November 11