

# Developing SIP and IMS Applications for the Next Generation Networks

*Part 1 Two and a half day workshop: 16 – 18 November 2005 (Wed – Fri morning)*  
*Part 2 Half-day business forum: 18 November 2005 (Fri afternoon)*

by  
**Prof. Thomas Magedanz,**  
an international  
expert in NGN

## Nature and Objectives

- This two and a half day compact course introduces the emerging IP Multimedia System (IMS) for the next generation fixed-mobile converging networks and the new paradigm for developing SIP Applications.
- This course is led by the internationally recognized NGN expert, Prof Thomas Magedanz, director of the “3G beyond / NGN” division at the Fraunhofer Institute FOKUS, Germany. He regularly speaks at major international events, including the 3G Congress in Hong Kong last year and coming November.
- In our half-day afternoon business forum, you will see latest SIP/IMS products, technologies and share the expert views of the future change of telecommunication.
- To survive and migrate to the next generation networks, you must understand SIP, IMS architectures and the application development methodology.

## Course Contents

### Day 1: Fixed-mobile convergence towards all-IP multimedia service delivery networks

- NGN Drivers and Protocols
- Overview of IMS and NGN Standards
- 3GPP 3G IMS Basic Architecture, IMS Core and key components
- Basic Signalling Flows, Charging and Security
- Diameter architecture and applications
- SIP architecture and operation

### Day 2: IMS Application Server and IMS Applications

- IMS Application Server Options – IN/CAMEL, OSA/Parlay, SIP AS
- IMS Applications: VoIP, Instant Messaging, Push to Talk
- Understanding the SIP Application Server, Programming and development tools
- VXML, CPL, HTTP and SIP Servlets
- Case Study: SIP Servlet Execution Environment with FOKUS Open IMS Playground ([www.fokus.fraunhofer.de/ims](http://www.fokus.fraunhofer.de/ims))

### Day 3 morning: Open Network APIs on top of IMS

- Parlay API, Webservices, Parly X and development tools
- Java APIs for integrated Networks (JAIN)
- OSA/Parlay on top of IMS – Push to talk example

### Day 3 afternoon: Forum on Business Opportunities of SIP and IMS Applications

## Instructor

### Part 1: Two and a half day workshop

**Thomas Magedanz (PhD)** is professor at the Technical University of Berlin in the field of next generation telecommunication infrastructures. In addition, he is director of the “3G beyond / NGN” division at the Fraunhofer Institute FOKUS, Germany, which also provides the open national NGN testbed in Germany since September 2002. He is an internationally recognised expert in the areas of Next Generation Intelligent Networks (IN) and Open Telecommunication Service Platforms. He is a senior member of the IEEE, editorial board member of several journals, and the author of more than 120 technical papers/articles. He is the author of two books on IN standards and IN Evolution and is a regularly invited tutorial speaker at major international IN events and conferences as he is famous for his comprehensive investigations and “easy to digest” style of presentations.



### Part 2: Forum on Business Opportunities of SIP and IMS Applications

- Speaker from mobile operators (invitation in progress)
- Speaker from IMS providers (invitation in progress)
- Speaker from SIP Application developers (invitation in progress)
- Speaker from Government Bodies (invitation in progress)

## Prerequisites and Details

Developers of mobile applications with fair understanding of fixed and mobile telecommunications (PSTN, GSM, GPRS, 3G), as well as basic know how in internet and information technologies (Java, CORBA, web services, etc.).

**Date:** Part 1: 16 November 2005 (Wed) – 18 November 2005 (Fri)  
Part 2: 18 November 2005 (Fri)

**Time:** Part 1:  
9:00am – 5:00pm for 16-17 November 2005  
9:00am – 12:30pm for 18 November 2005  
Part 2:  
2:00pm – 5:30pm

**Duration:** 3 days

**Venue:** Hong Kong Cyberport

**Fee:** HK\$ 3,400 for one seat of part 1 and two seats of part 2.

**Medium of Instruction:** English

**Training Material:** One full set of training material

**Award of Certificate:** A Certificate of Completion from HK Wireless Technology Association will be awarded to participants who have attended at least 80% of the course.

## Who Should Attend

Mobile and wireless applications developers or telecom professionals who would like to get the in-depth understanding of the practicality of IP Multimedia Services platform and SIP application development.

## Enquiries

For course details, please call (852) 2788-5795 or (852) 2989-9164. For enrolment, please call Ms. Yuen at (852)2788-5789, fax (852) 2788-5770 or email:[cecilia@hkpc.org](mailto:cecilia@hkpc.org). Website: <http://www.hktrainingonline.com>

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## Enrolment Form

- Date **Part 1: 16 November 2005 (Wed) – 18 November 2005 (Fri)**  
**Part 2: 18 November 2005 (Fri)**  
Time **Part 1: 9:00am – 5:00pm for 16-17 November 2005**  
**9:00am – 12:30pm for 18 November 2005**  
**Part 2: 2:00pm – 5:30pm**  
Fee **HK\$ 3,400 for one seat of part 1 and two seats of part 2.**
- Name (Mr/Miss/Mrs)English \_\_\_\_\_  
Chinese \_\_\_\_\_ ID No. \_\_\_\_\_  
E-mail \_\_\_\_\_
- Organization \_\_\_\_\_  
Position \_\_\_\_\_  
Business Address \_\_\_\_\_  
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Signature \_\_\_\_\_ Date \_\_\_\_\_  
*Note: All applicants must be employees from HK registered companies.*

## IMPORTANT

- Course fee must accompany this form (or its photocopy), otherwise enrolment may be rejected.
- Amount received will be imprinted. Cheques are subject to bank clearance.
- Enrolment fee is not refundable unless the organizers is notified in writing of your withdrawal at least 5 working days before the course commences. A handling charge of HK\$200 will also be levied.
- An applicant may, subject to approval from the organizers, nominate a substitute to attend the course on his/her behalf.
- The organizers has adopted a Personal Data (Privacy) Policy. The information provided will be used for the process of enrolment application, statistical purposes and other related matters. It may be provided to persons authorized to process the information for purpose relating to training enrolment. The provision of information is obligatory. Your enrolment application may not be accepted if you fail to provide all information as requested. For correction of or access to personal data after submission of this form, please forward the request to our Personal Data Controlling Officer at HKPC Building, 78 Tat Chee Avenue, Kowloon.
- The organizers reserves the right to reject any application in any circumstances and for whatever reasons. Payment of fees should only be construed as conditional acceptance of application.

## Course Fee and Discount

You will receive 5% early bird discount for enrolment on or before 28 October 2005.

## Venue and facilities

Unless otherwise state, the training course and the business forum will be held in Hong Kong Cyberport.

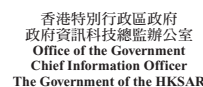
## 5 easy ways to enroll

- Tel: +852 2788 5789  
Fax: +852 2788 5770  
Website: <http://www.hktrainingonline.com>  
Email: [cecilia@hkpc.org](mailto:cecilia@hkpc.org)  
Mail: All cheques should be crossed and made payable to "The Hong Kong Wireless Technology Industry Association Limited"  
To: Ms. Cecilia Yuen  
IT Industry Development Division, HKPC Bldg,  
78, Tat Chee Avenue, Hong Kong.

## Organizers



## Sponsors



## Supporting Organizations



- Should you NOT wish to receive any promotional materials from the organizers in the future, please tick and fax this sheet to us at 2788 5770.

# ***Developing SIP and IMS Applications for the Next Generation Networks***

## ***Part 1: Training***

**Day 1: Nov 16, 9:00am – 5:00pm**

### **Module 1: NGN Drivers: Services and Network Technology Evolution**

- ❖ Fixed and mobile network evolution toward all IP packet networks
- ❖ Migration from 2G to 3G all IP mobile networks / all-IP reference network architecture
- ❖ Next generation mobile networks, business models and envisaged benchmark services (VHE, Presence, Push2Talk, Multimedia Conferencing, etc.)
- ❖ Evolution of Service Delivery Platforms (SDPs) for converging networks
- ❖ The 3GPP 3G IP Multimedia System (IMS) motivation and basic architecture
- ❖ The role of IMS within NGNs
- ❖ Overview of IMS and NGN Standards

### **Module 2: NGN Protocols – SIP, DIAMETER**

- ❖ IETF Brief Overview
- ❖ Basic SIP architecture and operation
- ❖ SIP VAS provision
- ❖ Basic Diameter architecture and operation
- ❖ Diameter applications

### **Module 3: IMS Basic Architecture and IMS Core**

- ❖ IMS Architectural Overview
- ❖ Explanation of IMS key components (P/I/S-CSCF, MG, MS, SIP-AS, HSS)
- ❖ IMS key interfaces and interactions (ISC, Sh, Cx, MW, Ro, Rf)
- ❖ IMS User Identities
- ❖ IMS Control of QoS of Bearer Networks
- ❖ Basic Signalling Flows - IMS Access, IMS Registration, IMS Service Usage
- ❖ IMS Charging and Security

**Day 2: Nov 17, 9:00am – 5:00pm**

### **Module 4: IMS Application Server Options and IMS Applications**

- ❖ IMS value service provisioning
- ❖ Basic IMS services versus IMS VAS
- ❖ IMS Application Server Options – IN/CAMEL, OSA/Parlay, SIP AS
- ❖ The role of OMA for IMS service standardisation
- ❖ IMS Applications: VoIP, Instant Messaging, Push to Talk

**Module 5: Using the SIP Application Server**

- ❖ Understanding the SIP Application Server
- ❖ SIP AS Programming Interfaces (VXML, CPL, SIP Servlets)
- ❖ HTTP vs SIP Servlets
- ❖ Related Development Tools
- ❖ The FOKUS Open IMS playground ([www.fokus.fraunhofer.de/ims](http://www.fokus.fraunhofer.de/ims))
- ❖ Case Study: SIPSee (SIP Servlet Execution Environment) within the FOKUS Open IMS Playground
- ❖ Converged SIPSee Applications
- ❖ Playground Demos

**Day 3: Nov 18, 9:00am – 12:30pm****Module 6: Using Open Network APIs on top of IMS – OSA / Parlay / JAIN**

- ❖ Motivation for Open Network APIs
- ❖ API structure and functions overview
- ❖ API Evolution, Versions and Relationships
- ❖ Parlay API, Parlay Webservices, Parlay X
- ❖ 3GPP Open Service Access
- ❖ Java APIs for integrated Networks (JAIN)
- ❖ The Classic OSA/Parlay API in Detail
- ❖ Parlay X in Detail
- ❖ Example services and implementation issues
- ❖ OSA/Parlay Development tools
- ❖ OSA/Parlay on top of IMS – Push to Talk Example
- ❖ Fixed Mobile Convergence - Community Services implemented with OSA/Parlay on IMS and Legacy networks
- ❖ FOKUS 3Gb playground - [www.fokus.fraunhofer.de/ngni](http://www.fokus.fraunhofer.de/ngni)

**Module 7: Summary & Questions & Answers**

- ❖ Comparison of Approaches
- ❖ Summary
- ❖ Q&A

***Part 2: Forum on Business Opportunities of SIP and IMS Applications*****Day 3: Nov 18, 2:00pm – 5:30pm**

- ❖ This afternoon business forum features industry and technology trend of converging fixed and mobile networks and SIP/IMS applications. Guest speakers to be invited will include operator, industry advisor, equipments provider and application developer.