

# Future Internet Seminar

*An open discussion of applied research results  
and activities on Future Internet technologies*

## Programme

**Monday 10/6/2013**

**3pm-6:30 pm, Room B109**

**A.G. Leventis Building**

**University of Cyprus**

Project Acronym/Title: **AUTOWINFI**

**Autonomic Wireless Networking for the Future Internet  
through Distributed Policy-Based Management**

Project Protocol Number: **DIDAKTOR/0609/21**

## PROGRAMME

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| 15:00-15:15  | Seminar Opening and Introduction<br><i>Dr. Georgios Ellinas, Associate Professor,<br/>University of Cyprus</i>   |
| 15:15-16:00  | Autonomic Wireless Networking for the Future Internet<br><i>Dr. Antonis M. Hadjiantonis, Research Fellow,<br/>KIOS Research Center, University of Cyprus</i>   |
| 16:00-16:20  | Network Mapping by Replaying Hyperbolic Growth<br><i>Dr. Fragkiskos Papadopoulos, Lecturer,<br/>Cyprus University of Technology</i>  |
| 16:20-16:40  | Resilient Backbone Networks for High Capacity Transport<br><i>Dr. Georgios Ellinas, Associate Professor,<br/>University of Cyprus</i>  |
| 16:40-17:00  | <i>Coffee Break</i>  |
| 17:00-17:20  | SEED - Speeding Every European Digital<br><i>Haris Neophytou, R&amp;D Director,<br/>InterFusion Services Ltd</i>   |
| 17:20 -17:40 | CNERIC - Applied Research on Wireless Networks<br><i>Dr. Panayiotis Philimis, Head of Applied Research Division<br/>Michalis Stylianou, ICT Department Manager,<br/>CNE Research and Innovation Center</i> |
| 17:40 -18:30 | Prospects for applied R&D on Future Internet technologies<br><i>Panel Discussion</i><br><i>Moderated by Antonis M. Hadjiantonis, Research Fellow,<br/>KIOS Research Center, University of Cyprus</i>       |



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### **Autonomic Wireless Networking for the Future Internet**

Antonis M. Hadjiantonis, Research Fellow, University of Cyprus

Talk abstract: Over the last few decades, the Internet has grown exponentially, while the recent proliferation of wireless and mobile devices with Internet connectivity has created a new landscape for a wireless future. It is evident that in the emerging “Future Internet”, wireless networking will remain significantly important, but at the same time increasingly complicated. These challenges are investigated in AUTOWINFI (Autonomic Wireless Networking for the Future Internet) project, an applied/industrial research DIDAKTOR/RPF project co-funded by the RoC and the ERDF.

The objective of AUTOWINFI project is to fully integrate mobile and wireless networks in a simplified, automated, and scalable manner. The presentation discusses AUTOWINFI architectural design and implementation, where autonomic principles are applied to achieve self-management capabilities. Emphasis is given on proof-of-concept case studies to demonstrate novelty and applicability to industry needs.

#### Speaker biography:

Dr. Antonis M. Hadjiantonis is an ICT engineer with 10 years of experience on applied research and development on mobile and wireless communication systems. He has received the PhD degree from the Centre for Communication Systems Research in 2008 (CCSR, Univ. of Surrey, UK) and a first-class honours Diploma in Electrical and Computer Engineering (Dipl-Ing) from the National Technical University of Athens in 2004 (NTUA, Greece). Since 2009, he has been working as a Research Fellow at KIOS Research Center, Univ. of Cyprus, primarily involved in postdoctoral project AUTOWINFI (Oct.2010-Jun.2013). Antonis interests are in the areas of autonomic network management, wireless and embedded networks, with applications in protection of critical infrastructures, smart grids, and intelligent transportation systems. He has taught telecommunication and computer engineering courses up to graduate level at OUC, UNIC, and CUT, as well as published several scientific contributions, including an edited book on “Telecommunication Economics”.

### **Resilient Backbone Networks for High Capacity Transport**

Georgios Ellinas, Associate Professor, University of Cyprus

#### Talk abstract:

The need for resilience in backbone networks is even more critical nowadays because of the amount of aggregate traffic that can be carried by the networks that are accommodating new applications requiring high data rates. A number of protection and restoration approaches have been suggested for restoring the traffic passing through a backbone network when a fault occurs. The main goal of these techniques is that the failure is restored quickly and efficiently via a simple automated system. In this way, the service providers can adhere to the prescribed Service level Agreements (SLAs) with their customers. This presentation will focus on the problem of protection and restoration in backbone networks and will present some of the research activities in this area undertaken in the last few years.

#### Speaker biography:

Prof. Georgios Ellinas is currently an Associate Professor in the Electrical and Computer Engineering Department at the University of Cyprus. Prior to joining the University of Cyprus George was an Associate Professor of Electrical Engineering at City College of the City University of New York (2002-2005). George also served as a senior network architect at Tellium Inc (2000-2002), and as a senior research scientist in Telcordia Technologies’ (formerly Bell Communications Research) Optical Networking Research Group (1993-2000). George’s research interests are in the areas of optical architectures, routing and wavelength assignment algorithms, fault protection/restoration techniques in arbitrary mesh optical networks, security in critical infrastructures, optical access networks, and optical-wireless converged networks.

### **Network Mapping by Replaying Hyperbolic Growth**

Fragkiskos Papadopoulos, Lecturer, Cyprus University of Technology

Talk abstract: Recent years have shown a promising progress in understanding geometric underpinnings behind the structure, function, and dynamics of many complex networks in nature and society. However these promises cannot be readily fulfilled and lead to important practical applications, without a simple, reliable, and fast network mapping method to infer the latent geometric coordinates of nodes in a real network. Here we present HyperMap, a simple method to map a given real network to its hyperbolic space. The method utilizes a recent geometric theory of complex networks modeled as random geometric graphs in hyperbolic spaces. The method replays the network's geometric growth, estimating at each time step the hyperbolic coordinates of new nodes in a growing network by maximizing the likelihood of the network snapshot in the model.

Speaker biography: Dr. Fragkiskos Papadopoulos is a Lecturer of the Department of Electrical Engineering, Computer Engineering and Informatics at Cyprus University of Technology. He received the Diploma in Electrical and Computer Engineering from the National Technical University of Athens, Greece, in 2002. In 2004 and 2007 he received respectively the M.S. and Ph.D. degrees in Electrical Engineering from the University of Southern California, Los Angeles. During 2007-2009 he was a postdoctoral research scholar at the Cooperative Association for Internet Data Analysis (CAIDA) at the University of California, San Diego, and then a visiting Lecturer at the Electrical and Computer Engineering Department of the University of Cyprus. As a Ph.D. student he also held internship positions at both CAIDA and AT&T Labs-Research. Fragkiskos' research interests lie in the area of Computer Networking and Network Science.

### **SEED: Speeding Every European Digital**

Haris Neophytou, R&D Director, InterFusion Services Ltd

Talk Abstract: SEED (Speeding Every European Digital) is a project co-financed by the European Commission through its Competitiveness and Innovation ICT Policy Support Programme, for raising citizens' awareness about existing e-Government contents and services previously invested by European Public Sectors, in order to be able to benefit from them. SEED aims to strengthen the e-Gov services offer by using only inclusive e-Gov approaches and reusing as much Public Sector Information (PSI) as possible. SEED also tries maximizing citizen participation with e-Gov services by enhancing and empowering interaction mechanisms based on future internet multi-channel capabilities. Finally, SEED aims to result in a set of e-Gov Public nodes that keep the Public Sector close to citizens and always ready to collect feedback from them using increased interactivity.

Speaker biography: Haris Neophytou is the founder and R&D Director of Interfusion Services Ltd ([www.interfusionservices.com](http://www.interfusionservices.com)), a highly innovative R&D intensive SME founded in March 2008. He holds a B.Sc. degree in Computer Science from the University of Cyprus and an MBA from CIIM. Throughout his career he undertook various roles in R&D and business projects, from project initiator, coordinator, Work Package & Task Leader and Technological Sustainability Leader. Currently he is Work Package Leader for SEED, ICT-PSP project, one of the main technical experts in the FUPOL FP7-ICT project and successfully supervised in the past the implementation of DIEGO (Digital Inclusive e-Governance) ICT-PSP project. His areas of expertise include inclusive eGovernment, computational intelligence and commercialization of R&D results. He is a frequent speaker at international, European and national conferences.

**Applied Research on Wireless Networks**

Dr. Panayiotis Philimis, Managing Director & Michalis Stylianou, ICT Division Manager, CNE Research and Innovation Center

Talk abstract: An overview of completed and running National and European Projects related to Wireless Networks Applications in Agriculture, Energy and Medical Sector.

Speaker biography: Dr Panayiotis Philimis is the founder & Managing Director of CNE Research and Innovation Center (CNERIC), a Center of Excellence in Applied Research, Innovation and design/ development of novel products in the fields of ICT, Energy, Mechanical & Electrical/Electronic Eng. and Medical Informatics. CNERIC was founded in 2012 after taking over the activities of the Applied Research & Consultancy Dpt of CNE Technology Ltd. He was a co-founder of CNE Technology Ltd and worked for 13 years as the Technical Director, Head R&D Division and Deputy Manager of ISO 17025 Accredited Laboratories. Coordinator of 4 FP7 & 6 National RTD projects with participation in >30. He has multidisciplinary expertise including design of novel products & services, ICT, metrology, prototyping etc. He has more than 20 publications in Conferences and Journals. Member in National & EN/ISO Technical Standard Committees. He is an Expert Evaluator for EU FP7 RTD proposals (ICT, Security etc.). He is the co-founder and Vice-President of CARIE (Cyprus Association of Research & Innovation Enterprises).

Michalis Stylianou is the Manager of ICT Division with BSc in Electrical Eng. & Computer Science and MSc in Networks/ Telecommunications from the NTUA, currently completing his MBA. Expert in the fields of Building Control Systems & Automation, Smart Metering and Energy Efficiency practices. He managed several projects in Building Energy Management and Control Systems, Building Professional Audio & Video Distribution & Management, Medical Informatics, Cross-Platform E-commerce and Mobile Applications.

**Notes**

Horizontal lines for taking notes.