In this issue:

Issue highlights 1
Meet the project seniors 2
4th plenary meeting & complementary courses 3
IEEE CAMAD 2014 4
Public Talks 5
Latest news 6
Upcoming events 7
CROSSFIRE in social media 7

Issue highlights

The CROSSFIRE project has been active for almost two years, showing significant research, training and dissemination activities. Four plenary meetings have been already organized and multiple seminars and complementary courses have been delivered, while the number of published papers continues to rise.

In this issue, the regular column “Meet the Project Seniors” is continued, presenting the profiles of CROSSFIRE’s Principal Investigators: Dr. Konstantinos Samdanis (NEC), Neil Scully (Vodafone) and Dr. Vasilis Friderikos (KCL).

The highlights of the 4th plenary meeting and complementary courses held in Heidelberg, Germany, between the 3rd to 6th of March, 2014, are presented. ESRs had the opportunity to learn a lot about the various standardization bodies and procedures, as well as the processes and “secrets” behind patents’ filing.

Three more public talks are presented in this newsletter issue, two delivered in the University of Athens and one in Aalborg University of Denmark.

Finally, CROSSFIRE has been very active participating in various outreach events, such as the Future Internet Assembly 2014, the International Workshop on Trends in Future Communications and the IEEE Communications Theory Workshop.

While the mid-term review of the project is approaching (15th of July), CROSSFIRE will continue to show significant achievements.
Meet the project seniors

Konstantinos Samdanis: CROSSFIRE Principal Investigator, NEC

Konstantinos Samdanis is a Senior Researcher and a Backhaul Standardization Specialist with NEC Europe, Heidelberg, Germany. He is leading a research activity about LTE network management, while his standardization activities include software defined networking and mobile backhaul, in where he is the Editor of the Energy Efficient Mobile Backhaul work item at Broadband Forum. In 2013 Konstantinos received the NEC Fresh Player award for his contribution at Broadband Forum. In the past he was active at the 3GPP Service Architecture Group 5 in the field of Energy Saving Management. Dr. Samdanis served as an Editor for the IEEE COMMUNICATIONS MAGAZINE and the IEEE Communications Society Multimedia Communications Technical Committee Society E-Letters and he is the NGN symposium co-chair at ICC 2014. He conducted a series of tutorials and talks about green communications on main IEEE conferences and industry events including MPLS 2012 and MPLS and Ethernet 2013 and is the editor of the Green Communications: Principles, Concepts and Practice, book from Wiley. He received a Ph.D. and an MSc from Kings College London, London, UK.

Contact: Konstantinos.Samdanis@neclab.eu
Company webpage: http://www.nec.com/

Neil Scully: CROSSFIRE Principal Investigator, Vodafone

Neil Scully received his M.Sc. in Electrical Engineering in 1997 and his MTD (Master of Technological Design) in Information and Communication Technology in 1999, both from Eindhoven University of Technology in the Netherlands. During 2000, he worked for KPN Research in the Netherlands. Since 2001, he has worked for Vodafone Group Research and Development in the UK. His main focus is on the analysis and development of mobile network access technologies, covering 3G, LTE, LTE-Advanced and Wi-Fi. He has worked on self-organising networks (SON) in 3GPP standards, NGMN (Next Generation Mobile Networks Alliance) and the EU-funded SOCRATES research project. On the topic of small cells and Wi-Fi, he has worked on deployment strategy studies, traffic steering and network architecture.

Contact: Neil.Scully@vodafone.com
Company webpage: http://www.vodafone.co.uk/

Vasilis Friderikos: CROSSFIRE Principal Investigator, KCL

Vasilis Friderikos lectures at the Centre for Telecommunications Research at King's College London. He has published 120 research papers in flagship IEEE, Elsevier, Springer journals, international conferences and book chapters. He has been track co-chair at the IEEE WCNC 2010 conference (acting technical program committee member for IEEE Globecom, IEEE ICC and several other flagship international conferences). He has also been organizing committee member of the Green Wireless Communications and Networks Workshop (GreeNet) during VTC Spring 2011. He has also been teaching advanced mobility management protocols for the Future Internet at the Institut Supérieur de l’Electronique et du Numérique (ISEN) in France during autumn 2010. He has received two times best paper awards in IEEE ICC 2010 and WWRF conferences respectively. He has been visiting researcher at WinLab in Rutgers University (USA) and recipient of the British Telecom Fellowship Award in 2005. His research interests lie broadly within the closely overlapped areas of wireless networking, mobile computing, and architectural aspects of the Future Internet. Vasilis is a member of IEEE, member of IET and member of the INFORMS section on Telecommunications. Research interests lie broadly within the closely overlapped areas of wireless networking, mobile computing, and architectural aspects of the Future Internet. Current areas of interest are network virtualization for emerging (LTE-Advanced) and future cellular networks (aka 5G) as well as application of delay tolerant networking techniques in terrestrial wireless networks.

Contact: vasilis.friderikos@kcl.ac.uk

To be concluded in the next issue...
**4th plenary meeting & complementary courses**

The 4th CROSSFIRE plenary meeting was held in Heidelberg, Germany, on the 3rd of March, 2014. NEC Europe Laboratories was responsible for hosting and organizing this event, together with the complementary courses that were delivered to the ESRs during the next days. All ESRs and Principal Investigators (PIs) attended this meeting.

The agenda included non-technical issues, namely management, training and dissemination activities, and technical issues, presented per Work Package (WP). Regarding the non-technical part, the project’s current status, future activities and planning were discussed. The technical part included presentations per WP leader and per ESR. The main objective of the technical presentations was the monitoring of the progress of each partner, the validation of commitment to the objectives of CROSSFIRE, and finally the identification of potential collaborations among ESRs in the near future.

During the next days (4-6/3/2014), all ESRs took part in CROSSFIRE’s complementary courses on “Standardization” and “Patents”. Nine different sessions were organized. On the first day, Lindsay Frost, Chief Standardization Engineer at NEC, gave a talk on basic standardization issues, providing a high level overview of the 3GPP and ETSI bodies. Following this, Neil Scully, CROSSFIRE’s PI in Vodafone UK, presented the key areas of LTE RAN standardization, such as HetNet features, Machine-to-Machine (M2M) communications and Self Organising Networks (SON). Later, Andreas Kunz, Senior Standardization Engineer at NEC, provided an overview about the 3GPP network architecture, discussing features such as the Group Communication System Enablers for LTE, Proximity Services (ProSe) and Machine-Type Communications (MTC). Finally, Konstantinos Samdanis, CROSSFIRE’s PI in NEC, gave a lecture on mobile backhaul architectures and energy efficiency, under the scope of the Broadband Forum.

During the next day, Veda Young, IPR Manager at NEC, familiarized the ESRs with patent-related issues and with intellectual property rights, explaining what is a patent, what is patentable, what is the patent application and examination process, etc. Examples on real patents were discussed, such as the famous “Post-it” and Michael Jackson’s “anti-gravity illusion method”. Next, on the same day, NEC’s IPR team provided practical guidelines on how to find patent-related documents through online databases, and ESRs had the opportunity to perform hands-on exercises on patent search. Finally, Joerg Sweina, Senior Standards Representative for NEC, discussed about Standards Essential Patents and their impact on the industry.

During the last day of the courses, Sibylle Schaller, Project Manager at NEC, delivered a course on Software Defined Networking (SDN), Open Flow and SDN-Related Standards Developing Organizations such as the Open Networking Foundation (ONF) and the ETSI ISG Network Functions Virtualization (NFV). Last, Juergen Quittke, Leader of NEC’s Network Research Division, introduced ESRs to the IETF Standardization Group, describing its structure, management, working groups, meetings, documents, etc., and gave valuable information on how to actually get involved in IETF standardization efforts.

The exact program of the courses may be found [here](#).
IEEE CAMAD 2014

The International Workshop on Computer-Aided Modeling Analysis and Design of Communication Links and Networks (CAMAD), provides a forum for discussion of recent developments on analytical and simulation tools and techniques for the performance evaluation of communications systems. It was launched in 1986, being held every 2 years until 2006, often in cooperation with flagship IEEE Communication Society conferences (Int. Conference on Communications - ICC, Global Telecommunication Conference - GLOBECOM). Since 2007, the workshop has been held once every year motivated by the ever increasing interest in this hot research and development field, and since 2009 CAMAD is an attractive IEEE Communications Society portfolio event.

This year, the IEEE CAMAD 2014 will be held on December 1-3, in Athens, Greece. CROSSFIRE is actively involved in the organization of CAMAD 2014. Nikos Passas (CROSSFIRE Technical Manager, UoA) is TPC Co-Chair, Konstantinos Samdanis (Principal Investigator, NEC) is Panels Chair, Marco Di Renzo (Principal Investigator, CNRS) is responsible for the organization of Workshop & Special Sessions, Salvatore Costanzo (ESR, UoA) is one of the Web Chairs and Eirini Liotou (ESR, UoA) will assist in the event’s Local Arrangements.

Website: [http://www.ieee-camad.org/](http://www.ieee-camad.org/)
Download the CFPs [here](#). (Deadline for paper submissions: 10/7/2014)

Sponsored by:
Public Talks

Talks in University of Athens, 18/2/14

Two public talks took place on the 18th of February 2014, in the University of Athens. Both were delivered in the frames of the undergraduate course “Communication Networks I” of the Department of Informatics & Telecommunications of UoA, so students with only basic knowledge of networking principles attended it. Moreover, the talk was advertised and open to the non-expert audience. These talks were about:

“Network Virtualization & the evolution of networking”, Salvatore Costanzo

The aim of this talk was to introduce the key reasons for network virtualization and present several of the virtualization-based technologies that have been developed recently in various application scenarios. Virtualization is the process of creating virtual versions of physical resources that emulate the same physical characteristics. It can enable multiple virtual networks to coexist on a common physical infrastructure in an isolated way without the need for awareness of the underlying virtualization process. Network Virtualization is envisioned to reduce both the capital expenditure and operational expenditure as it can be used for sharing the infrastructure between multiple operators. It can also permit the sharing of heterogeneous wireless resources so that users can move between different networks, based on diverse access technologies, seamlessly and without service interruption.

“Quality of Experience”, Eirini Liotou

The goal of this talk was to introduce the multidimensional concept of QoE, and explain the motivation behind adopting it in existing and future mobile networks. In this context, the benefits both for the network operator and the end-user were discussed. The differences between Quality of Service (QoS) and QoE were emphasized and the need for measuring and improving QoE were stressed. Subjective and objective modeling was also explained. Moreover, a framework for QoE provisioning in communication networks was proposed. The presentation was continued with a discussion on QoE’s technical, economic and legal challenges. Finally, CROSSFIRE was presented and the role and significance of QoE in this project were discussed.

Talk in Aalborg University, 5/2/14

“Cooperative networks for LTE-A”, Nestor Hernandez

Steinwurf’s public talk was given in the Antennas, Propagation and Networking meeting on February 5th, 2014 and was organized at Aalborg University (AAU) campus. ESR Nestor Hernandez exposed the description, goals and challenges addressed in the CROSSFIRE project and also discussed his proposed research plan within it as part of his Ph.D. studies.

First, he mentioned the partners involved and the scope of the working packages followed with the architecture model and methodology proposal described within CROSSFIRE in order to convey what are the challenges of the project. Afterwards, he proposed a path with network coding describing his work, e.g., cooperative strategies with network coding for interference aware solutions, to enhance interference-aware solutions and future transceiver design. Finally, he showed his study plan with a list of courses that he will be taking during his studies.
Latest news

**Future Internet Assembly ‘14**

Salvatore Costanzo attended the "Future Internet Assembly" (FIA) conference, held on 18-20 March, 2014 in Athens. FIA is a collaboration of more than 150 projects that have recognized the need to reinforce European activities on the Future Internet to maintain European competitiveness in the global marketplace. During the conference there were several talks from renowned speakers of the industry and the research community focusing on reshaping the Future Internet infrastructure for innovation and on how Public-Private Partnerships are preparing for this purpose. Moreover, during the FIA exhibition, demonstrations and test-bed developments based on network/cloud integration and SDN/NFV solutions that enable the Future Internet innovation were presented. More information about this event may be found [here](http://futurenets.cpqd.com.br/).

**Trends in Future Communications ‘14**

The CPqD optical communications group from Brazil and the Bristol University high-performance networking group from England have jointly organized the event "Trends in Future Communications: High Performance Network Infrastructure for Future Internet" that took place at CPqD in Campinas, SP, between February 23 and 25, 2014. This event, co-funded by FAPESP and the British Council, was designed to bring together researchers and research centers in São Paulo State and the UK to foster collaboration. Vasilis Friderikos from KCL participated in this event as a presenter. For more information, visit: [http://futurenets.cpqd.com.br/](http://futurenets.cpqd.com.br/).

**IEEE Communications Theory Workshop ‘14**

On May 25-28, 2014, ESRs Peng Guan and Wei Lu from CNRS participated in the IEEE Communications Theory Workshop (CTW) 2014 in Curaçao. 5G-related technologies were the leading theme for CTW 2014, with technical sessions, plenary speakers, and panel discussions on Full-Duplex Wireless Communications, Interference Management in Cellular HetNets, Machine-to-Machine Communications, Massive MIMO, etc.

Upcoming events – Save the dates!

- The IEEE CloudNet’14 special session on “Network Virtualization and QoE in Future Mobile Cellular Networks” is currently accepting papers, until the 16th of June. The conference will take place on 8-10 October 2014 in Luxembourg. Information on the CFPs can be found here.
- The mid-term review of the CROSSFIRE project will take place on July 15th, 2014, in Barcelona.
- The next CROSSFIRE seminars on “Analysis and simulation of mobile networks” will be delivered on 16-17 of July, in UOC premises, Barcelona.
- CROSSFIRE will be present in the 2014 IEEE International Conference on Communications (ICC), which will be held in the city of Sydney, Australia from 10-14 June 2014.
- The next CROSSFIRE open day will be organized jointly with Vodafone and KCL, on June 2014.
- The IEEE CloudNet’14 special session on “Network Virtualization and QoE in Future Mobile Cellular Networks” is currently accepting papers, until the 16th of June. The conference will take place on 8-10 October 2014 in Luxembourg. Information on the CFPs can be found here.
- The mid-term review of the CROSSFIRE project will take place on July 15th, 2014, in Barcelona.
- The next CROSSFIRE seminars on “Analysis and simulation of mobile networks” will be delivered on 16-17 of July, in UOC premises, Barcelona.
- CROSSFIRE will be present in the 2014 IEEE International Conference on Communications (ICC), which will be held in the city of Sydney, Australia from 10-14 June 2014.
- The next CROSSFIRE open day will be organized jointly with Vodafone and KCL, on June 2014.

Crossfire in social media

Crossfire is present in:

- LinkedIn
  CROSSFIRE
  (open group)
- Twitter
  @mitncrossfire
- Wiki
  (members only)

The research profiles of the CROSSFIRE members may be found in the Research Gate scientific community.

So please follow us @mitncrossfire and join “CROSSFIRE” group in LinkedIn to keep up to date with the project’s progress!

The e-learning platform for the training activities of CROSSFIRE is available here: http://crossfire.uoc.es/moodle/
Some courses allow guest access.