

REPORT UPDATE ON ACTIVITY WG 2

20th March 2015 – ALCOMA, Kloster Banz, Germany

PUBLICATIONS

Journals

- K. Alic E. Pertovt A. Svigelj, Opportunistic Network Coding, *International Journal Of Computers Communications & Control*, ISSN 1841-9836.
- E. Paolini, C. Stefanovic, G. Liva, P. Popovski, "Coded Random Access: Applying Codes on Graphs to Design Random Access Protocols", *IEEE Communications Magazine*, to appear. (Collaboration with the University of Bologna and DLR)
- A. Tassi, I. Chatzigeorgiou and D. Vukobratović, "Resource allocation frameworks for network-coded layered multimedia multicast services", *IEEE Journal on Selected Areas in Communications*. Special Issue on Fundamental Approaches to Network Coding in Wireless Communications, to appear.
- J. L. Dominguez-Garcia, M. I. Garcia-Planas, L. E. Um. "Sufficient conditions for controllability of serial concatenated linear systems. Advances in Applied and Pure Mathematics". (2014), pp. 123-127
- M.I. Garcia-Planas, S. Tarragona, L.E. Um. "Codigos de convolucion desde el punto de vista de teora de control. Analisis de la observabilidad". *Ciber, Revista Hispanica de Tendencias en Ciberseguridad*. 1, (1), (2014), pp. 1-8.
- M.I. Garcia-Planas, J.L. Domnguez, L.E. Um. Sufficient conditions for controllability and observability of serial and parallel concatenated linear systems. *International journal of circuits, systems and signal processing*. Vol. 8, (2014) pp. 622-630.

Conferences

- Heidarpour, G. Karabulut Kurt, M. Uysal, "Diversity-Multiplexing Tradeoff for Network Coded Cooperative OFDMA Systems," in the *Proc. IEEE International Conference on Communications*, London, UK, 8-12 June 2015.
- J. Goseling, C. Stefanovic, P. Popovski, "Sign-Compute-Resolve for Random Access", in the *Proc. 52nd Allerton Conference on Communication, Control, and Computing*, Monticello, IL, USA, October 2014. (Collaboration with University of Twente)
- A. Tassi, I. Chatzigeorgiou and D. Vukobratović, "Optimized network-coded scalable video multicasting over eMBMS networks", in the *Proc. IEEE International Conference on Communications (ICC)*, London, United Kingdom, June 2015.
- João S. Lemos, Francisco Rosário, Francisco A. Monteiro, João Xavier, António Rodrigues, "Massive MIMO Full-Duplex Relaying with Optimal Power Allocation for Independent Multipairs", in *IEEE SPAWC*, in the *Proc. IEEE International Workshop on Signal Processing Advances in Wireless Communications*, to be held in Stockholm, Sweden, June 2015.
- Flávio S. Brás, Filipe E. Ferreira, Francisco A. Monteiro and António Rodrigues, "Interference Suppression with Physical-Layer Network Coding and MIMO for Multi-Way Channels", in *Proceedings of SiPS 2014*, in the *Proc. IEEE International Workshop on Signal Processing Systems*, Belfast, UK, Oct. 2014.
- P. Saxena, A. Vazquez-Castro, "Network Coded Multicast and Multi-unicast over Satellite", in the *Proc. Conference on Advances in Satellite and Space Communications*, 2015.
- L. E. Um, M. I Garcia-Planas Quaternary convolutional codes and linear systems. ALCOMA 2015

SERVICE

- Francisco Monteiro, from University Institute of Lisbon, Portugal, organizer together with Prof. Mikko Valkama (Tampere University of Technology, Finland) of the Special Session on Full-duplex Radio at the 16th IEEE International Workshop on Signal Processing Advances in Wireless Communications, Stockholm, Sweden, June 2015.
- Francisco Monteiro, from University Institute of Lisbon, Portugal, lead Guest Editor together with Camilla Hollanti, Vitaly Skachek, and Ioannis Chatzigeorgiou as guest editors of the special issue on Network Coding of the EURASIP Journal on Journal on Advances in Signal Processing, Springer. To be published in 2015.

STSMs and Visits

- C. Stefanovic from Aalborg University will visit Novi Sad in May 2015 via STSM.
- Peter Farkas from Slovak University of Technology, Slovakia, participated at the ANTA Workshop organized by ANTA research group from Aalto University. Title of the presentation: "Transmission technique exploiting wireless network coding and feedback for one networking scenario" (joint work with Eugen Ružický).
- Ioannis Chatzigeorgiou from Lancaster University, UK, visited Francisco Monteiro from University Institute of Lisbon, Portugal, from 3rd to 16th November 2014 (2 weeks) supported by UK-funded R2D2 project for a collaboration associated with the reciprocal visit to Lancaster which had been supported by and STSM in July 2014.
- Mladen Kovačević from Novi Sad University, Serbia, visited Aalborg University funded by a COST STSM resulting in the following publication: M. Kovacevic and P. Popovski, "Zero-Error Capacity of a Class of Timing Channels," IEEE Trans. Inform. Theory, vol. 60, no. 11, pp. 6796-6800, Nov. 2014.
- Alberto Ravagnani from University of Neuchâtel, Switzerland, working with Elisa Gorla, visited Autonomous University of Barcelona, Spain. Invited talk: "Duality of rank-metric codes" was given to final-year students of engineering and PhD students of several departments of the Engineering school.

INTERNATIONAL PROJECTS

- Francisco Monteiro, from University Institute of Lisbon, Portugal, and Gunes Kurt from Technical University of Istanbul, Turkey, have jointly submitted a project proposal "Network-Coded Full-Duplex Software Radio (N-FUSOR)", to FCT (Portugal) and TÜBİTAK (Turkey) under a Portugal-Turkey call for joint projects.
- Angeles Vázquez-Castro, from Autonomous University of Barcelona, Spain, and her team is part of the consortium of the just started Horizon 2020 Research Project for disaster management: GEO-VISION (GNSS-driven, EO, Verifiable Image and Sensor Integration for mission-critical Operational Networks). The team's work will deal with applications of network coding to Galileo-based services.

TESTBEDS

The research group with the Jozef Stefan Institute, Slovenia, has developed a testbed over WiFi with server and several clients for performance evaluation of reliable wireless video-streaming using Network Coding. Results have been submitted to the 15th International Conf. on Applied Computer Science (ACS '15) conference in Konya, Turkey, May 20-22, 2015.