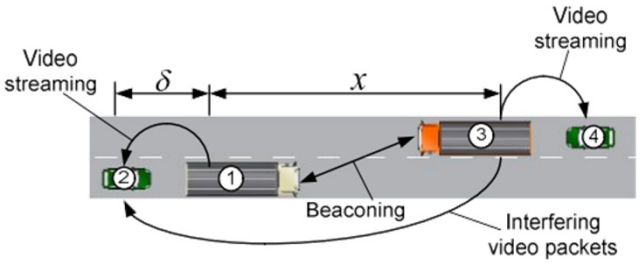
International Guest Professor Alexey Vinel

A project in Research for Innovation

– the overarching strategic research programme of Halmstad University, supported by The Knowledge Foundation

Knowledge Foundation

Partners:
Volvo Group Trucks Technology, Halmstad University



a) Our method. b) H.264/SVC

Motivation/Goal

Prof. Vinel complements the researchers at HH very nicely with his expertise in probabilistic analysis of wireless communication. Moreover, the goal is to contribute to the internationalization of the research in several aspects.

Research Focus

Design and analysis of scalable and robust real-time vehicular communication protocols. Apart from the theoretical novelty, it is of interest to the relevant industrial community (vehicle manufactures, telematics solutions suppliers, etc.).

Results

- Vehicular communication with probabilistic guarantees
- Demonstration of vehicular video transfer
- Increased international collaboration
- New funded projects
- Organization of international conferences
- Broadening of the HH competence

Publications

Berbineau, M, M. Jonsson, J.-M. Bonnin, S. Cherkaoui, M. Aguado, C. Rico-Garcia, H. Ghannoum, R. Mehmood, and A. Vinel, editors. *Communication Technologies for Vehicles –Proc. 5th International Workshop, Nets4Cars/Nets4Trains 2013*, Villeneuve d'Ascq, France, May 14-15, 2013. *LNCS 7865*, Springer-Verlag Berlin Heidelberg, pp. 121-135, 2013.

Lyamin, N., A. Vinel, M. Jonsson, and J. Loo, "Real-time detection of Denial-of-Service attacks in IEEE 802.11p vehicular networks," *IEEE Communications Letters*, vol. 18, no. 1, pp. 110-113, Jan. 2014.

Belyaev, E., A. Vinel, A. Surak, M. Gabbouj, M. Jonsson, and K. Egiazarian, "Robust vehicle-to-infrastructure video transmission for road surveillance applications," *IEEE Transactions on Vehicular Technology*, accepted 2014.

Jonsson, M., A. Vinel, B. Bellalta, N. Marina, D. Dimitrova, and D. Fiems, editors. *Multiple Access Communications, 6th International Workshop, MACOM 2013*, Vilnius, Lithuania, Dec. 16-17, 2013, *Lecture Notes in Computer Science, vol. 8310*,, 2013.

Lyamin, N., C. Campolo, A. Vinel, A. Molinaro, and M. Jonsson, "Service discovery and access in multi-channel VANETs," *submitted for reviewing.*

Shao, C., S. Leng, Y. Zhang, A. Vinel, and M. Jonsson, "Analysis of connectivity probability in platoon-based vehicular ad hoc networks," *Proc. 10th International Wireless Communications and Mobile Computing Conference (IWCMC 2014)*, Nicosia, Cyprus, Aug 4-8, 2014. Best paper award.

Böhm, A., M. Jonsson, K. Kunert, and A. Vinel, "Context-aware retransmission scheme for increased reliability in platooning applications," *Lecture Notes in Computer Science*, vol. 8435, pp. 30-42, 2014.

Belyaev, E., A. Vinel, M. Jonsson, and K. Sjöberg, "Live video streaming in IEEE 802.11p vehicular networks: demonstration of an automotive surveillance application," *Proc. IEEE INFOCOM 2014*, Toronto, Canada, Apr. 27 – May 2, 2014.

Bellalta, B., E. Belyaev, M. Jonsson, and A. Vinel, "Performance evaluation of IEEE 802.11p-enabled vehicular video surveillance system," *IEEE Communications Letters*, vol. 18, no. 4, pp. 708-711, Apr. 2014.

Sikora, A., M. Berbineau, A. Vinel, M. Jonsson, A. Pirovano, and M. Aguado, editors. *Communication Technologies for Vehicles –Proc. 6th International Workshop, Nets4Cars/Nets4Trains/Nets4aircraft 2014*, Offenburg, Germany, May 6-7, 2014. *LNCS vol. 8435*, Springer International Publishing Switzerland, 2014.

Jonsson, M., A. Vinel, B. Bellalta, and E. Belyaev, editors. *Multiple Access Communications, 7th International Workshop, MACOM 2014*, Halmstad, Sweden, Aug. 27-28, 2014, *Lecture Notes in Computer Science, vol. 8715*, Springer International Publishing Switzerland, 2014.

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