

## Zbynek Kocur

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Research Interests Telecommunication Networks

- Wireless Networks, Mobile Networks, Sensor Networks, SmartGrids Networks
- Data Flow Analysis, Simulation and Optimization
- Proprietary Solution of Data Transmission and its Real Implementation

Education Ph.D., Telecommunication Science 2014  
Czech Technical University in Prague, Faculty of Electrical Engineering  
Thesis: Data Transmission Optimization in Wireless Environment Based on Multilayer Coordination  
Advisor: Jiri Vodrazka ([vodrazka@fel.cvut.cz](mailto:vodrazka@fel.cvut.cz))

M.S., Telecommunication Science (2002 - 2008)  
Czech Technical University in Prague, Faculty of Electrical Engineering  
Thesis: Instruments for Analysis in Wireless Access Networks  
Advisor: Jaroslav Burcik ([burcik@inovacentrum.cz](mailto:burcik@inovacentrum.cz))

Academic and Research Experience System for Data Transmission from Fast Moving Objects  
Research was focused on broadband transmission from fast moving objects with the aim of high quality video signal transmission. The system has a very good performance in highly radio interference environment, with this premise, it is also applicable as a stationary system with requirement of the guaranteed bandwidth during wireless transmission.  
The system is designed to support aerobatics contest evaluation, flight tests of small airplanes, medial support of air shows and other similar kinds of shows. Video quality is sufficient for use in public television and Internet on-line streaming. The system is usable in industry where a needed wireless bandwidth transmission of data in radio harsh environment is guaranteed. In this project, I have been working on proposal of the communication system and simulation of the signal spreading between plane and ground station.

### Data Networks in the Area of Antarctic Circle

The project is focused on the autonomous data transmission from The Czech Antarctic Station of Johann Gregor Mendel to Czech Republic. The system is optimized for automatic sensor data collection and its archiving. The collected data are sent at regular intervals to the database server in the Czech Republic for further manipulation.

I am working at inter-base and satellite communication model and data stream optimization.

### Research Internship Network Planning for Interior Ministry

The project was focused on WiMAX network planning with nation-wide range. The proposed network is used for civil defense.

I worked at the signal spreading simulation and the core network design as team leader.

### SmartGrids Implementation for CEZ Group

The project was focused on implementation of smart telecommunication systems into the energetic network. I actively worked on solution of implementation as a team leader.

### Selected Publications

Kocur, Z. - Safranek, M. **High Speed Mobile Communication** In: TSP - 31st International Conference Telecommunications and Signal Processing [CD-ROM]. Budapest: Asszisztencia Szervező Kft., 2008, ISBN 978-963-06-5487-6.

Neruda, M. - Kocur, Z. - Safranek, M. **Satellite Data Transfer in the area of Antarctic Circle** In: RTT 2008 [CD-ROM]. Bratislava: STU in Bratislava, 2008, ISBN 978-80-227-2939-0.

Neruda, M. - Kocur, Z. - Burcik, J. **Data Transfer Optimization via Inmarsat Satellite Network** In: TSP - 32nd International Conference on Telecommunications and Signal Processing [CD-ROM]. Budapest: Asszisztencia Szervező Kft., 2009, ISBN 978-963-06-7716-5.

### Under Submission

Kocur, Z. - Neruda, M. - Bohac, L. **Optimization of TCP Satellite Communication** In: Proceedings of IWSSIP 2010. Brazil, Rio de Janeiro, 2010. Manuscript available upon request.

Z. Kocur, V. Machula, **Utility model No. 19713**, Industrial Property Office of the Czech Republic

### Teaching Experience

#### Teaching Assistant

Department of Telecommunication Engineering

- Communications in Data Network 2008 - 2012
- Network Technology I, II
- Basics of Network Technology

Honors and Awards CTU Rector Prize for Applied Research 2009

Computer Skills Languages: C/C++, Assembler, Python, Awk, Unix shells, Html, Docbook, Matlab, Omnet++.  
Operating systems: Unix/Linux, Windows, MAC OS.

References

**Dr. Lukas Kencl**

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**Dr. Miroslav Voznak**

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Deputy head of Department of Telecommunications  
at Faculty of Electrical Engineering and Computer  
Science  
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**Dr. Jiri Vodrazka**

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