

I. Personal and study details

Student's name: **Ertunç Ezgi** Personal ID number: **464300**
Faculty / Institute: **Faculty of Electrical Engineering**
Department / Institute: **Department of Circuit Theory**
Study program: **Communications, Multimedia, Electronics**
Branch of study: **Systems of Communication**

II. Master's thesis details

Master's thesis title in English:

Non-line of Sight Visible Light Communications

Master's thesis title in Czech:

Non-line of Sight Visible Light Communications

Guidelines:

Recent development in solid-state lighting and highly efficient white light-emitting diodes (LEDs) allowed new communication approach ? Visible Light Communications (VLC). Data rates in the orders of Gb/s over a very short transmission span can be achieved over line-of-sight (LOS) VLC links. Even though indoor VLC can be established by the LOS connections, when the link is shadowed it can use diffuse reflections and communicate via non-LOS (NLOS) path. The main task in the diploma thesis will be to analytically and experimentally analyse utilization of NLOS VLC. Derive optical channel impulse responses using ray-tracing model and analyse experimentally BER performance in case of VLC link with reflection from different surfaces.

Supervisor specialist: Ing. Petr Chvojka

Bibliography / sources:

- [1] Z. Ghassemlooy, L. Nero Alves, S. Zvanovec and M. Ali Khalighi, Visible Light Communications: Theory and Applications, CRC Press, 2017.
[2] P. Chvojka, S. Vitek, S. Zvanovec, Z. Ghassemlooy, S. Rajbhandari, Analyses of Non-Line of Sight Visible Light Communications, Optical Engineering, vol. 56, no.11, pp. 116116-1 - 7, 2017.

Name and workplace of master's thesis supervisor:

prof. Ing. Stanislav Zvánovec, Ph.D., Department of Electromagnetic Field, FEL

Name and workplace of second master's thesis supervisor or consultant:

Date of master's thesis assignment: **26.02.2018** Deadline for master's thesis submission: _____

Assignment valid until: **30.09.2019**



prof. Ing. Stanislav Zvánovec, Ph.D.
Supervisor's signature



prof. Ing. Pavel Sovka, CSc.
Head of department's signature

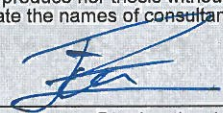


prof. Ing. Pavel Ripka, CSc.
Dean's signature

III. Assignment receipt

The student acknowledges that the master's thesis is an individual work. The student must produce her thesis without the assistance of others, with the exception of provided consultations. Within the master's thesis, the author must state the names of consultants and include a list of references.

Date of assignment receipt



Student's signature