

## I. Personal and study details

Student's name: **Hašpl Vojtěch** Personal ID number: **499277**  
Faculty / Institute: **Faculty of Electrical Engineering**  
Department / Institute: **Department of Telecommunications Engineering**  
Study program: **Electronics and Communications**

## II. Bachelor's thesis details

Bachelor's thesis title in English:

**Development of Testbed for Vehicular Edge Computing**

Bachelor's thesis title in Czech:

**Vývoj testbedu pro Vehicular Edge Computing**

Guidelines:

Familiarize yourself with 5G mobile networks, platforms for emulation of mobile networks and the control of radio access network. Study the concept of edge computing with primary focus on vehicular edge computing, that enables computation heavy demanding processing to be done in the edge computing servers. Evaluate existing solutions for vehicular edge computing offloading, management of communication and computation resources and propose possible enhancements. Based on the existing works setup a working testbed for computation offloading from vehicles via 5G mobile network, evaluate its performance and outline possible future development towards 6G mobile networks.

Bibliography / sources:

- [1] L. Bréhon-Grataloup, R. Kacimi, and A.L. Beylot, "Mobile edge computing for V2X architectures and applications: A survey.", Computer Networks, 206, p.108797, 2022.  
[2] S. Baidya, K. Yu-Jen, Z. Hengyu, Z. Jishen, and D. Sujit, "Vehicular and edge computing for emerging connected and autonomous vehicle applications.", ACM/IEEE Design Automation Conference (DAC), pp. 1-6. IEEE, 2020.

Name and workplace of bachelor's thesis supervisor:

**Ing. Jan Plachý, Ph.D. Department of Telecommunications Engineering FEE**

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

Date of bachelor's thesis assignment: **12.01.2023** Deadline for bachelor thesis submission: **26.05.2023**

Assignment valid until: **22.09.2024**

Ing. Jan Plachý, Ph.D.  
Supervisor's signature

Head of department's signature

prof. Mgr. Petr Páta, Ph.D.  
Dean's signature

## III. Assignment receipt

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

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Date of assignment receipt

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Student's signature