

Semestral Thesis

Master's study program **Information Security**

Department of Telecommunications

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**Year of
study:** 2

Academic year: 2022/23

TITLE OF THESIS:

**Distributed acoustic sensing system data analysis applied for perimeter
protection**

INSTRUCTION:

The thesis focuses on distributed acoustic sensing (DAS) system data in HDF5 format. The semestral part of the thesis studies DAS principles and the output format of the deployed system, followed by an implementation of conversion from data to audio signal (in WAV format). This part also investigates the possibilities of real-time data analysis. The diploma thesis proposes a graphical user interface displaying real-time data with various chart manipulation methods. The final program is tested with a real DAS system deployed onto the faculty optical sensoric polygon.

RECOMMENDED LITERATURE:

- [1] PARKER, Tom; SHATALIN, Sergey; FARHADIROUSHAN, Mahmoud. Distributed Acoustic Sensing—a new tool for seismic applications. first break, 2014, 32.2.
- [2] COLLETTE, Andrew. Python and HDF5: unlocking scientific data. " O'Reilly Media, Inc.", 2013.

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Chair of study program board

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