BRNO UNIVERSITY OF TECHNOLOGY
FACULTY OF ELECTRICAL ENGINEERING AND COMMUNICATION

Master's Thesis

Master's study program **Information Security**

Department of Telecommunications

Student: Bc. Jakub Senčák ***ID:*** 196504

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.

Date of project specification: 6.2.2023 ***Deadline for submission:*** 19.5.2023

Supervisor: Ing. Adrián Tomašov

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Chair of study program board