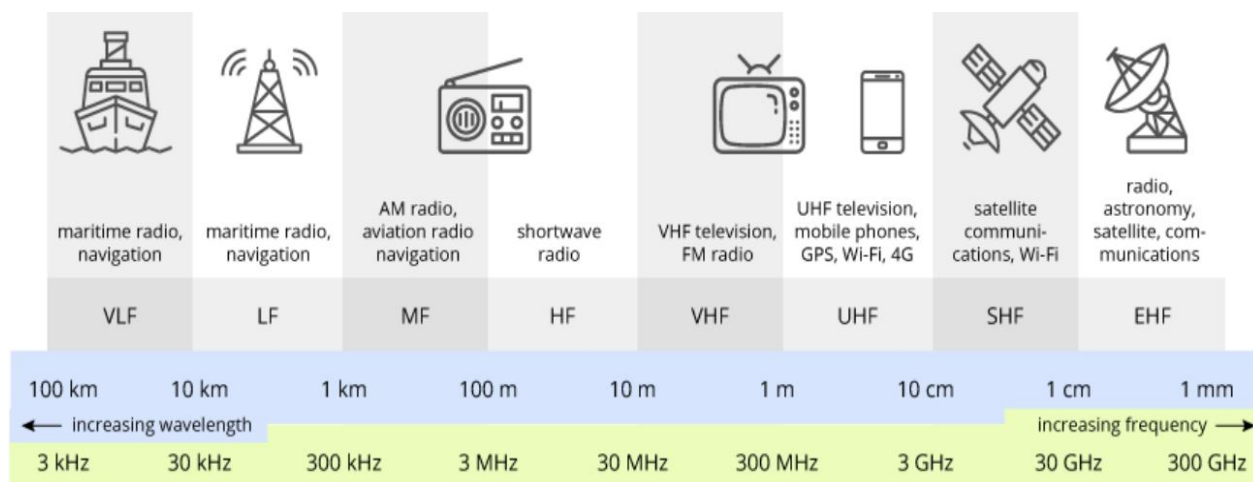


Bachelor's Thesis

Analyzing a Radio Signal



Radio communication surrounds us every day, from satellites and aircraft to navigation beacons, maritime systems, and countless other applications. With modern software-defined radios (SDR) it is now easier than ever to capture, visualize, and analyze unknown transmissions. This thesis offers you the opportunity to dive into real-world radio spectrum data, explore signals of your choice, and contribute to a better understanding of our invisible electromagnetic environment.

The goal of this bachelor's thesis is the analysis of a radio signal of your choice. You will begin by choosing a signal of interest, e.g. from the database Signal Identification Guide (sigidwiki.com). The thesis requires capturing the radio signal with an SDR, performing time- and frequency-domain analysis, and applying signal processing techniques to extract information about the radio signal. Where possible, you will compare your findings with existing knowledge.

Your Tasks

- Select a signal of interest
- Commission an SDR setup to capture the radio signal and visualize it (GNU Radio)
- Perform signal processing to extract information (GNU Radio, Python, or MATLAB)
- Document findings and compare them with references

Your Profile

- Interest in wireless communications and signal processing
- Experience with GNU Radio, Python, or MATLAB is advantageous

Contact

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