Master Thesis Project – Antenna Development for 6G FR3 Applications

Field: Antenna Technology / Wireless Communication / Applied Physics

Background

The upcoming 6G standard is expected to introduce a new frequency range known as **FR3**, spanning approximately **7–15 GHz**. This range offers a promising balance between coverage and capacity, making it suitable for indoor and urban wireless networks. Antenna design for FR3 presents unique challenges and opportunities, including:

- **Wideband performance** to support high data rates.
- **Compact form factors** for integration in consumer and industrial devices.
- **Advanced beamforming** and MIMO capabilities.

Proant AB, a part of Mobile Mark Inc., specializes in mobile, portable and fixed site antennas. We are now offering a thesis opportunity to explore antenna concepts for 6G FR3, contributing to our innovation roadmap and future product development.

Thesis Scope

The project will include:

- A **literature study** of antenna technologies suitable for FR3 (e.g., patch arrays).
- **Design and simulation** of antenna prototypes using tools such as CST Studio.
- **Fabrication and testing** of selected designs using available lab equipment.
- **Evaluation and documentation** of performance metrics (e.g., bandwidth, gain, radiation pattern).
- A final **report and presentation** to Proant and Mobile Mark's R&D team.

Your Profile

We are looking for a motivated student with:

- A background in **Engineering Physics**, **Electrical Engineering**, or a similar program.
- Interest in **electromagnetics**, **RF design**, and **wireless systems**.
- Experience with simulation tools is a plus, but not required.
- Strong analytical and communication skills.

Practical Information

- **Credits:** 30 ECTS
- **Start Date:** January 2026
- **Location:** Primarily at **Proant AB in Umeå**, with potential travels.
- **Compensation:** 40,000 SEK upon approved final report.
- **Number of positions:** 1
- **Application deadline:** December 2025, but the offer may be assigned earlier.

Contact

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