

## Open Thesis / Project

# Mastering BLE on Android and iOS

### Thesis Type

Master Project / Master Thesis

### Motivation

In an increasingly connected world, Bluetooth Low Energy (BLE) has emerged as the go-to technology for seamless interaction between smartphones and Internet of Things (IoT) devices. Despite its widespread adoption, companies across the board struggle with crafting reliable and efficient BLE-based applications. With a varying BLE communication performance across different smartphones and operating systems, the challenge grows exponentially when exchanging time-critical data.

This thesis aims to solve these problems by providing a library that implements highly reliable and efficient Bluetooth Low Energy (BLE) communication for Android and iOS. Using our state-of-the-art measurement equipment, you will find the root causes of existing BLE problems on smartphones and their impact on IoT applications. Furthermore, you will implement mechanisms and techniques to mitigate these problems and to create highly reliable and efficient BLE applications.

Your research will pave the way for new, innovative smartphone-based IoT applications, from tracking the performance of elite athletes to monitoring critical health parameters in patients and unleashing the power of real-time data in industrial settings. Get ready to redefine what is possible with BLE on smartphones and contact us today.

For more information about time- and safety-critical BLE applications visit [dewinelabs.com](http://dewinelabs.com).



### Goals and Tasks

Within this context, you can explore several directions and perform different tasks, such as:

- Investigate the BLE performance of state-of-the-art smartphones using our high-fidelity measurement equipment;
- Learn and improve your Android, iOS, and Flutter development skills;
- Elevate your BLE expertise as you tackle real-world challenges, bridging the gap between theory and practical application.

We offer the **possibility to pay** you for your work.

### Target Group

- Students of ICE/Telematics;
- Students of Computer Science.

### Required Prior Knowledge

- Experience with Android, iOS and/or Flutter development;
- Basic knowledge of Bluetooth Low Energy (BLE) and wireless communication;
- Experience with embedded system development (e.g., in Zephyr RTOS) is a plus.

### Contact Person

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