



Lehrstuhl für Sicherheit in der Informatik  
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*Student job (HiWi) in cooperation with Fraunhofer AISEC, Garching*

# Automated Test Environment for Embedded Devices

## Motivation and Task Description

At Fraunhofer AISEC, we research and develop software for embedded systems. This usually involves usage of CI Pipelines to run unit and integration tests. However, for some functionalities, e.g. SoC specific security functions, there has not been any suitable automated test setup so far.

The goal of this student job is to extend existing CI functionality with a mechanism to integrate several physical devices. Currently, our setup for testing these devices requires manually setting hardware jumpers, and flashing the board over a USB connection. This process, i.e. setting jumpers, resetting and flashing boards, should be automated and made accessible over the network.

## Area of Work

You will get in touch with:

- ARM Toolchain / Yocto
- NXP Universal Updater (UUU)
- Hardware Boards/ Raspberry Pi / PI KVM
- potentially Jenkins for CI/CD integration

## Requirements

- Scripting Languages (e.g. Python)
- Previous experience in Embedded Development (e.g. with Cortex-A, Cortex-M ...) and its interfaces (USB, UART, GPIO) is advantageous

## Contact

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