# Reactive Jamming

Lab Report

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## ABSTRACT

This lab report presents the creation of an reactive jammer. We will describe how the frame handling works on the WARP and how it can be used to suppress individual targeted devices or communications respectively. At the end of this report we evaluate the performance of our jammer and discuss possible improvements.

## 1 INTRODUCTION

Wireless signals, as they are used in most of today's analog or digital communications, are very sensitive and affectable by the environment. Signals with the same frequency can interfere and suppress each other. This effect is typically used by jammers to prevent a certain receiver from decoding a signal. While jamming is typically associated with malicious behaviour or within military conflicts to hinder an opposing party from exchanging information, there also exists other jamming schemes, so called friendly jamming. Friendly jamming can be used to protect vulnerable systems from adversarial actions, e.g., pacemakers that can be wirelessly reprogrammed. More recent work also demonstrated that secrete key-exchanges can be realized at the physical layer utilizing a jammer.

The objective of this lab was to create a reactive WiFi jammer using the Wireless Open-Access Research Platform (WARP). WARP is a programmable Software-Defined Radio (SDR) which provides a basic implementation of the 802.11g WiFi standard. The architecture of the WARP allows to transmit frames while still receiving a signal. Thus WiFi transmissions with a certain Medium Access Control (MAC) address can be analyzed and jammed if they are matching a target address.

In comparison with existing jammers this approach is more precise as it only suppresses the signals of a certain target, while still allowing the communication of other devices. This also results in much lower power-consumptions, due to the smaller amount of frames that have to be jammed.

## 2 IMPLEMENTATION

## 3 CONCLUSION AND TAKE-AWAY

## 4 FUTURE WORK

## REFERENCES

*SEEMOO PhySec (Lab RDS) 2017/18, February 2018, Darmstadt, Germany*