

Variations in Wi-Fi Beacon Packets RSSIs due to interference from different Wi-Fi devices and the usage of different chipset

Aravinth, S. Panchadcharam

Supervisors:

Dr. Arash Behboodi

Filip Lemic



Telecommunication Networks Group
Technische Universität Berlin

Outline

- Introduction
- Prototype of Graphical Presentation
- Definition of Scenarios
- Interferences Sources
- Parameters of Interference
- Expected Results
- Schedule
- Conclusion

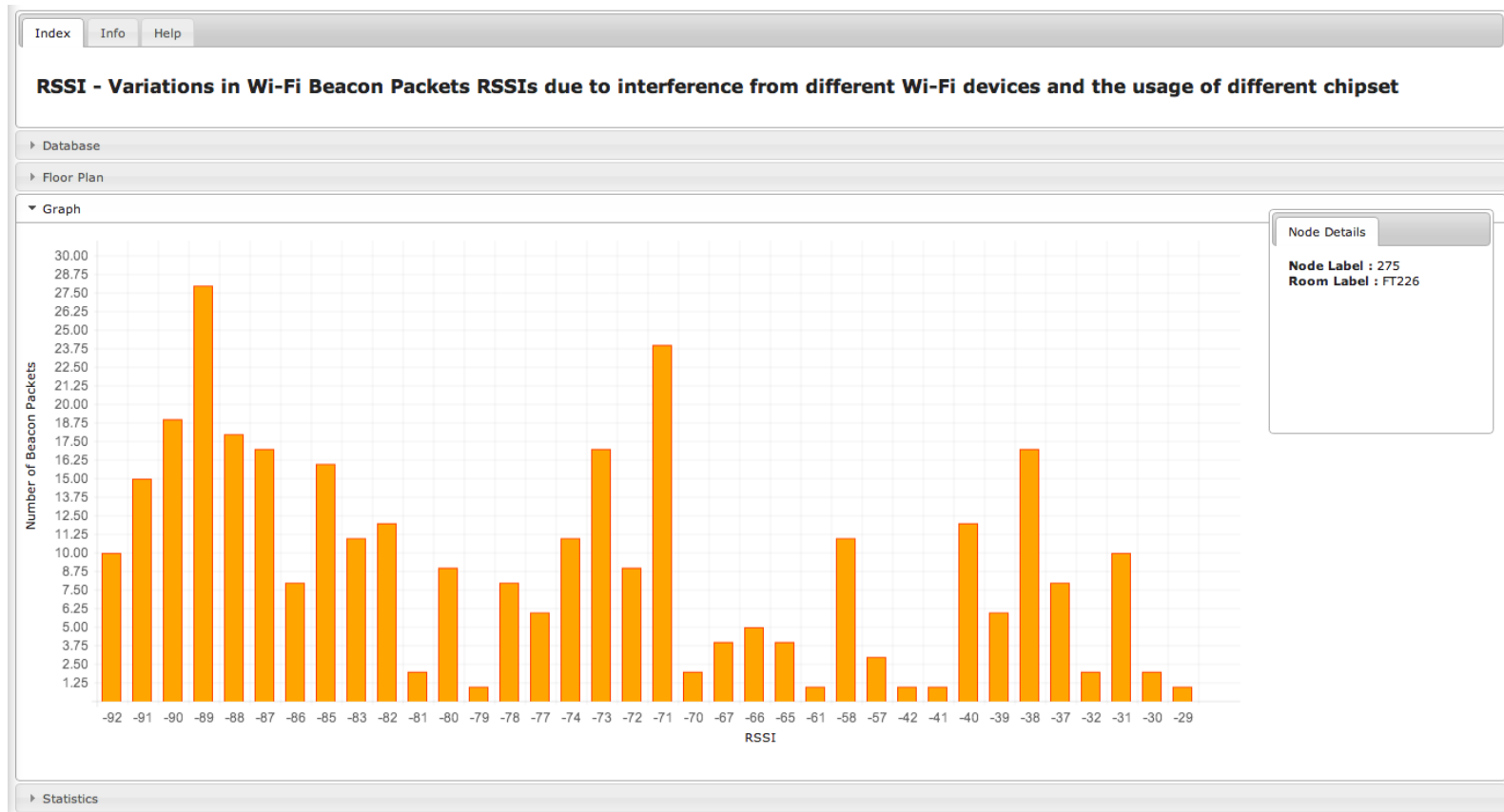
Introduction

- RSSI:
 - **RSSI - *Received Signal Strength Indicator***
 - Indicates the power of the signal that is received at the receiver side
 - One field of a beacon packet

- GOAL:
 - Examine how RSSI values are changed due to interference, different chipsets and distance

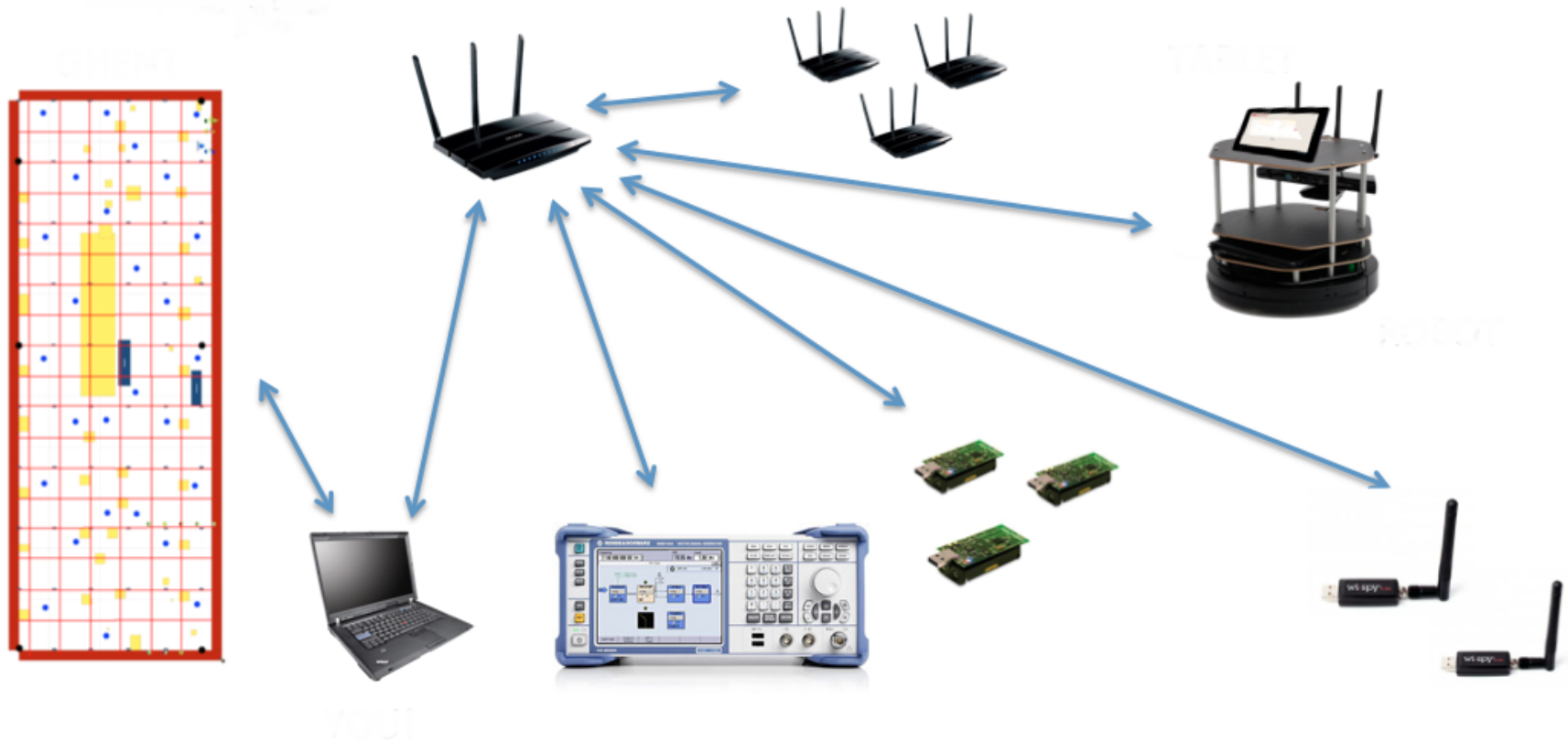
Graphical Representation

- Simplifies the tracking of experiments
- Gives a nice overview of the raw data from different experiments and different locations



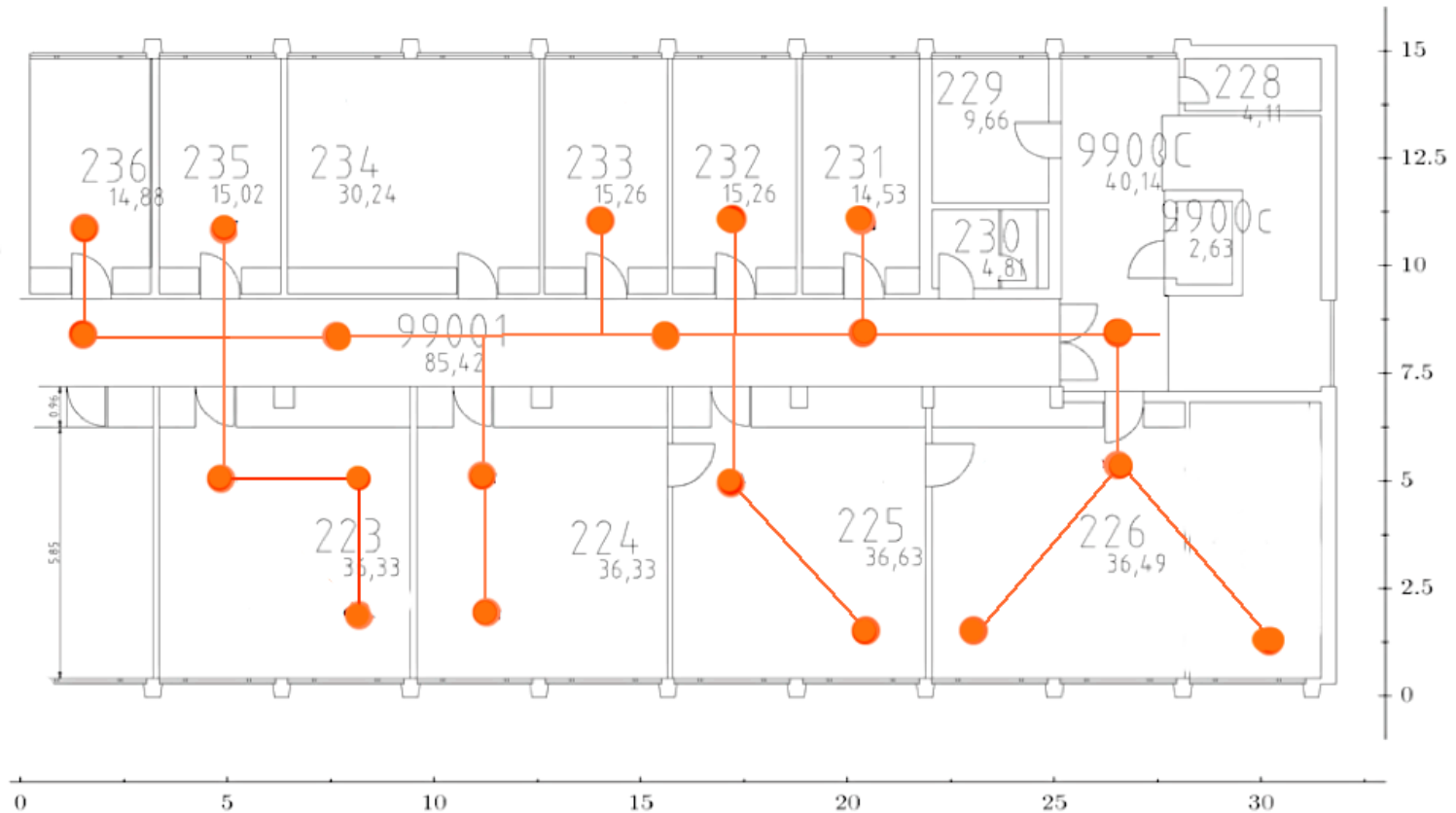
Scenarios - Reminder

Testbeds : TWIST & Gent



Scenarios – Measurement locations

- “Random” measurement points in a given testbed
- Easily accessible with the robot

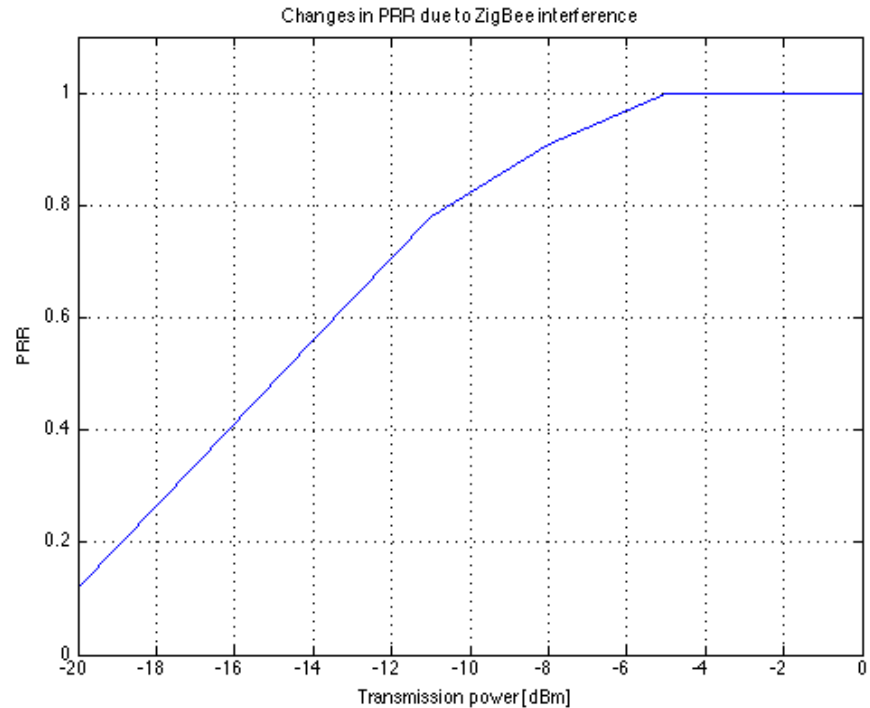


Interference sources

- ZigBee
 - 802.15.4
 - Jamming on a ZigBee channel
- Signal generator
 - Microwave interference
 - Generating the envelope of a microwave
- Wi-Fi routers
 - 802.11
 - Jamming on Wi-Fi channel
 - Traffic from additional sources to the APs
- Two testbeds: TWIST & w-iLab.t II

Expected Results

- Changes in the beacon packets due to different types and amounts of interference:
 - Packet Loss
 - Variation in RSSI Values



Time Plan

- 16.10.2013 – Project Introduction
- 04.11.2013 – Project Presentation
- 3 weeks – Development of graphical presentation tool, experiments preparation, defining the scenarios, locations, interference types, etc.
- 27.11.2013 – 1st Milestone
- 3 weeks – Experiments, measurements
- 20.12.2013 - 2nd Milestone
- 3 weeks – Analyzing the achieved results, calculation of the statistical data, presentation of the results
- 20.1.2014 – Final presentation
- 27.1.2014 – Submission



Thanks for your attention!