



Cognitive Radio Experimentation World



WiHeT Wireless e-Health Testbed [Televic Healthcare NV]

Goals

- **Test Wi-Fi roaming on smartphones from different vendors**
- □ Run experiments to see which of the three hypotheses is true
- □ The device doesn't roam
- □ The device roams at Layer 2
- The device roams at higher layers

Challenges

- Wireless tools on smartphones are not always reliable
 - Wireless driver needs to be accessed directly to obtain **RSSI** information
- Implementation of Wi-Fi roaming is vendor specific

Wi-Fi Roaming



Two Wi-Fi access points are set up with the same SSID.

The smart phone automatically associates with the other access point if it can provide a better connection.

Smartphones are mounted on top of mobile nodes in the iMinds w-iLab.t testbed.

Fixed Wi-Fi nodes in the testbed are used to set up the access points.

Mobile nodes are moved through the testbed, going in and out of range of Wi-Fi access points.

Experiment Hardware



Experiment results

Smartphones don't support L2 roaming. They remain connected to the same AP until it is no longer visible.

This results in high packet loss.

Imec

UNIVERSITY OF THESSALY

NICTA

-40

-50

-80

-90

100

80

RSSI [dBm]



: IJS

MAIRBUS

IMSF



availability of mobile nodes in the testbed.

- Experiment repetition is fast and easy.
- Testbed visit is necessary for on-site debugging.
- Learning curve is too steep for small experiments, but very acceptable for more complex experiments.

PROJECT DATA

Start Date: 01/09/2010; Duration: 60 M EU Funding: 4.885 M€

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