

Security Analysis of IoT Devices

Abdelkader Lahmadi, Frédéric Beck

Abdelkader.lahmadi@loria.fr, Frederic.Beck@inria.fr

IFIP/IEEE International Symposium on Integrated Network Management
21 May 2021 // Bordeaux, France



Outline

- IoT devices overview (1h: 9h a.m -> 10h a.m)
 - Consumer and industrial IoT
 - Hardware and software architectures
- Communication protocols (1h: 10h a.m -> 11h a.m)
 - Z-Wave protocol
 - Bluetooth Low Energy (BLE) protocol
- IoT attacks and threats (2h: 11h15 a.m -> 1h15 p.m)
 - Case studies and demonstrations
- Protocols analysis: BLE and Zwave (4h: 2h15 -> 6h30 p.m)
 - BLE Sniffing and hacking
 - ML based detection of MitM attack in BLE networks

Lab material

- Demos and exercices

<https://gitlab.inria.fr/resist/tutorial-iot-security>

- How to detect a MitM attack in BLE network using Machine Learning

https://colab.research.google.com/drive/1rHVuLmzdg3s3GHogS_WM_4r6SrFlu7Na?usp=sharing