Algorithms for Radio Networks

Organization

University of Freiburg
Technical Faculty
Computer Networks and Telematics
Christian Schindelhauer

CoNe
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Organization

▸ **Web page**

- https://cone.informatik.uni-freiburg.de/lehre/aktuell/afrnws13

▸ **Forum**

- http://archive.cone.informatik.uni-freiburg.de/forum3/viewforum.php?f=22

- for discussions, remarks, critics, funnies, etc.

▸ **Lecture**

- Monday 10:15-12:00, room 101/SR 01-016

- Friday 10:15-11:00, room 101/SR 01-016

▸ **Exercises**

- Friday 11:15-12:00, room 101/SR 01-016

- starts 08.11.2013

Contents

- **Basics of Wireless Communication**

- **Cellular Networks**

- **Mobile Ad Hoc Networks**

  - Routing

  - Localization and mobility

- **Wireless Sensor Networks**

  - Medium Access, mobility, data aggregation, sensor coverage, energy

- **Localization**

  - ToA, TDOA, RSSI, Cell-based, anchorless

- **MIMO**

  - basics, modulation, throughput, directed communication, diversity

Exam

▸ **Oral exam**

- from your solutions presented in the exercises

  - at least one question

- closed book exam

▸ **Exam registration online**

▸ **Questions in the exam**

- from the lecture and the exercises

Online Documents

▸ **Online documents are only available within the university**

- ask for password

- slides

- recordings

- exercises

Literature

- Murthy, Manoj, Ad Hoc Wireless Networks, Prentice Hall 2004
- Ilyas, Mahgoub, Handbook of Senso Networks: Compact and Wired Sensing Systems, CRC Press
- Agrawa, Zeng, Introduction to Wireless and Mobile Systems, Thomson, 2003
- Schiller, Mobile Communications, Addison-Wesley, 2000
- Karl, Willig, Protocols and Architectures for Wireless Sensor Networks, Wiley, 2005
- Zhao, Guibas, Wireless Sensor Networks – An Information Processing Approach, Morgan Kaufmann, 2004

- Yu, Prasanna, Krishnamachari, Information Processing and Routing in Wireless Sensor Networks, 2006
- Wu, Handbook on Theoretical and Algorithmic Aspects of Sensor, Ad Hoc Wireless, and Peer-to-Peer Networks
- Boukerche Handbook of Algorithms for Wireless Networking and Mobile Computing, CRC 2005
- Perkins, Ad Hoc Networking, Addison-Wesley, 2000
- research papers from the field
- more to be announced