

Object Localization with Focus on RFID Based Systems

Seminar at the Universitat Politècnica de València

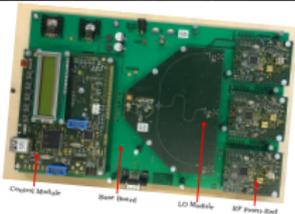
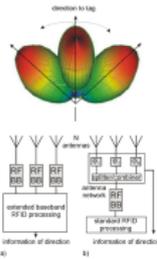
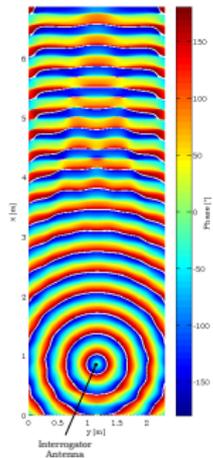
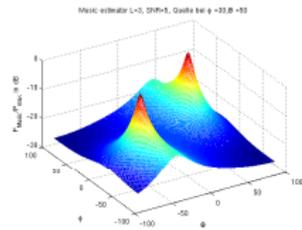
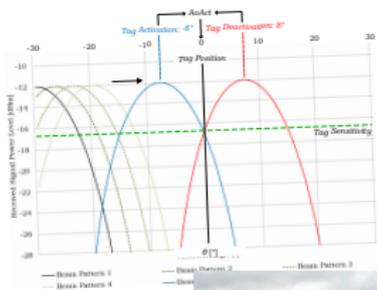
Prof. Dr. Uwe Dettmar

Technische Hochschule Köln
Institute of Communication Engineering

March 13-15, 2019



Technology
Arts Sciences
TH Köln



Schedule

March 13, 2019

16:00 - 16:30 Welcome and overview

16:30 - 17:00 Fields of application

17:15 - 19:00 Principles of localisation

March 14, 2019

10:00 - 11:30 Localisation systems and technologies

11:45 - 12:15 Introduction to RFID systems

12:15 - 13:30 Localisation by UHF RFID based Rx beam forming

March 15, 2019

10:00 - 11:00 Lab: Some Matlab simulations

11:15 - 12:15 Localisation by UHF RFID based Tx beam forming

12:30 - 13:00 Test

13:00 - 13:30 Outlook and future work

Learning outcomes

- ▶ awareness of the relevance of localisation and positioning techniques
- ▶ familiarity with some basic principles for localisation
- ▶ basic knowledge of existing technologies and systems
- ▶ deeper understanding of beam forming techniques for the localisation of RFID tagged objects
- ▶ ability to compare and choose appropriate systems for localization tasks



Prof. Dr. Uwe Dettmar

- 1983 -1989 studies in electrical engineering with major Telecommunications at TU Darmstadt
- 1989 -1995 research student and postdoctoral research assistant at Institut für Netzwerk- und Signaltheorie, TU Darmstadt, research on error correcting codes, dissertation entitled "'Partial Unit Memory Codes"' July 1994
- 1995-1998 research scientist at Ascom Tech and Ascom System AG, Mägenwil, Schweiz
- 1998-1999 senior scientist at Ericsson Eurolab Deutschland, Radio Access Group, Nürnberg
- since 1999 Professor TH Köln, Digital Communications

Member at IEEE and VDE/ITG. More than 40 journal and conference publications, 15 patents in the area of channel coding and digital communications