WPNC
Workshop on Positioning, Navigation and Communication

HTW — Hochschule für Technik und Wirtschaft Dresden — University of Applied Sciences

Agenda for 20th/21st of March 2013

Sessions 1-6 take place at HTW Z107
Poster Sessions, exhibitions and lunch/coffee breaks take place at HTW PAB (Z110)

Day 1 - 20th of March 2013

08:00 – 09:00	Registration
09:00 – 10:00	**Keynote**

On the role of positioning in cyber-physical systems

Henk Wymeersch, Chalmers University of Technology

[handwritten note: - wichtig nicht nur Position sondern auch Messzeiten - Kooperation zwischen Antennen - Position ist immer Position + Unsicherheit - Intelligente Antennenauswahl]

10:00 – 10:20	**Coffee break**

SESSION 1 – WLAN Localization and Fingerprinting

10:20 – 10:40 S1WF1: Genetic Algorithm Optimized DCM Positioning

Rafael Saraiva Campos, Universidade Federal do Rio de Janeiro
Lisandro Lovisolo, Universidade do Estado do Rio de Janeiro

[handwritten: christoph ✗ | Fingerprinting/Mapping cell id./RSSI einfaches Optimierungsverfahren Generic Algorithm Approach Korrelation!]

10:40 – 11:00 S1WF2: Joint Time Delay and DOA Estimation Using 2-D Matrix Pencil Algorithms and IEEE 802.11ac

Abdo Gaber, University of Magdeburg
A.S. Omar, University of Magdeburg

[handwritten: 2 Frequenz Methode Multipath delay estimation]

11:00 – 11:20 S1WF3: Search Space Reduction in DCM Positioning using Unsupervised Clustering

Rafael Saraiva Campos, Universidade Federal do Rio de Janeiro
Lisandro Lovisolo, Universidade do Estado do Rio de Janeiro
Marcello L. R. de Campos, Universidade Federal do Rio de Janeiro

[handwritten: christoph ✗ | Positionsmessung basierend auf Fingerprinting/Mapping Reduktion Kohonen Layer]

11:20 – 11:40 S1WF4: A Pocket Guide to Indoor Mapping

Pascal Bissig, ETH Zurich
Roger Wattenhofer, ETH Zurich
Samuel Welten, ETH Zurich

[handwritten: signal capture for Mapping by cell phone by walking around using all sensors in the cell phone zuvor gemessene Stellen werden zur Korrektur genommen channel based Fingerprints/clc]

11:40 – 12:00 S1WF5: Real Time Evaluation of RF Fingerprints in Wireless LAN Localization Systems

Nuha Alkhanbashi, EBTIC, Khalifa University of Science, Technology and Research
Nayef A. Alsindi, EBTIC, Khalifa University of Science, Technology and Research
Saleh Al-Araji, College of Engineering, Khalifa University of Science, Technology and Research
Nazar Ali, College of Engineering, Khalifa University of Science, Technology and Research
Zdenek Chaloupka, EBTIC, Khalifa University of Science, Technology and Research
Vivek Yenamandra, The Ohio State University
James Aweya, EBTIC, Khalifa University of Science, Technology and Research

[handwritten: RSS CIR CTF FCF - best für Mapping]

12:00 – 12:40	**Lunch**

POSTER SESSION

12:40 – 13:20 Poster talks (find a list of posters at the end of this programme)

16:00 – 16:20   **S3DI3: Pedestrian Navigation in Harsh Environments using Wireless and Inertial Measurements**

Javier Prieto, University of Valladolid
Santiago Mazuelas, Massachusetts Institute of Technology (MIT)
Alfonso Bahillo, University of Valladolid
Patricia Fernandez, University of Valladolid
Ruben M. Lorenzo, University of Valladolid
Evaristo J. Abril, University of Valladolid

[handwritten: Fusion ist z.B Nutzen von verschiedenen Positions-berechnungen z.B. RSSI + inertial Sensor Markov Filter for Fusion Kalman]

16:20 – 16:40   **S3DI4: Block Localization Methods for Mobile Robot Tracking and Navigation**

Yuiko Tanaka, Osaka City University
Shinsuke Hara, Osaka City University

[handwritten: wifi Roboter weiß wie er verfahren ist RSSI + Weginformation wird genutzt]

16:40 – 17:00   **S3DI5: Joint Motion Capture and Navigation in Heterogeneous Body Area Networks with Distance Estimation Over Neighborhood Graph**

Jihad Hamie, CEA-Leti Minatec Campus
Benoît Denis, CEA-Leti Minatec Campus
Cedric Richard, Université de Nice Sophia Antipolis

[handwritten: Simulation Sensoren auf dem Körper]

17:00   **Open Meeting**

[handwritten: RMS? IEEE 802.15.6 TDoA]

| 11:00 – 11:20 | **S4RA3: Improving Ranging Accuracy of Active and Passive Anchors in the Presence of Clock Imperfection** |

Yue Wang, Chinese Academy of Sciences
Weiming Xiong, Chinese Academy of Sciences

| 11:20 – 11:40 | **S4RA4: Non-parametric Estimation of Error Bounds in LOS and NLOS Environments** |

Omotayo Oshiga, Jacobs University, Bremen
Stefano Severi, Jacobs University Bremen
Giuseppe Abreu, Jacobs University Bremen

[handwritten: Fisher Information Matrix gibt eine Wolke um die Position — gaussian kernel — optimieren Verbessern — chebyshev-hermite]

| 11:40 – 12:00 | **S4RA5: Sparse Subcarrier Allocation for Timing-based Ranging with OFDM Modulated Signals in Outdoor Environments** |

Emanuel Staudinger, German Aerospace Center (DLR)
Armin Dammann, German Aerospace Center (DLR)

[handwritten: Nonline of Sight]

| 12:00 – 12:20 | **S4RA6: NLOS Mitigation in TOA-Based Localization Using Semidefinite Programming** |

[handwritten: Einfluss wenn 2 Antennen LOS, 1 Antenne NLOS (größere Entfernung) ? verarbeitung Optimierung]

Reza Monir Vaghefi, Virginia Tech
Javier Schloemann, Virginia Tech
R. Michael Buehrer, Virginia Tech

| 12:20 – 13:00 | **Lunch** |

| **SESSION 5 – GNSS and Cellular-based Localization** |

| 13:00 – 13:20 | **S5GC1: Accurate Lane Detection Using Commercial GNSS Devices** |

[handwritten: Erkennen wenn NLOS auftritt Signal drop]

Roi Yozevitch, Ariel University Center
Boaz Benmoshe, Ariel University Center
Amit Dvir, COLMAN College

| 13:20 – 13:40 | **S5GC2: 2.5D Mapping using GNSS Signal Analysis** |

Ayal Weissman, Bar-Ilan University
Boaz Benmoshe, Ariel University Center
Harel Levi, Ariel University Center
Roi Yozevitch, Ariel University Center

| 13:40 – 14:00 | **S5GC3: A Precise Proximity-Weight Formulation for Map Matching Algorithms** |

Ali Oran, Singapore MIT Alliance for Research and Technology (SMART)
Patrick Jaillet, Massachusetts Institute of Technology (MIT)

| 14:00 – 14:20 | **S5GC4: Performance analysis of PRS-based synchronization algorithms for LTE positioning applications** |

Marco Panchetti, University of Pisa
Cecilia Carbonelli, Intel Mobile Communications GmbH
Michael Horvat, Intel Mobile Communications GmbH
Marco Luise, University of Pisa

| 14:20 – 14:40 | **S5GC5: A low cost TDOA Localization System: Setup, Challenges and Results** |

Noha El Gemayel, Karlsruhe Institute of Technology
Sebastian Koslowski, Karlsruhe Institute of Technology
Friedrich K. Jondral, Karlsruhe Institute of Technology
Joachim Tschan, LS Telcom

PS1: DockingAssist: A Novel Vessel Navigation System Design Based on WiMAX and DGNSS

Lei Jiang, ITT Department of CRIC
Josep Perello, ITT Department of CRIC
Esteban Gutierrez, CTAE-ASCAMM
Jesus Romero, CTAE-ASCAMM
Jarmo Prokkola, VTT Technical Research Centre of Finland
Jarno Pinola, VTT Technical Research Centre of Finland
Esa Piri, VTT Technical Research Centre of Finland

PS2: BeSpoon single chip UWB, optimised for Indoor Location

Jean-Marie Andre, BeSpoon

PS3: Collaborative Navigation Field Trials with Different Sensor Platforms

Allison Kealy, University of Melbourne
Guenther Retscher, Vienna University of Technology
Azmir Hasnur-Rabiain, University of Melbourne
Nima Alam, UNSW
Charles Toth, The Ohio State University
Dorota Brzezinska, Ohio State University
Terry Moore, University of Nottingham
Chris Hill, University of Nottingham
Vassilis Gikas, National Technical University of Athens
Chris Hide, University of Nottingham
Chris Danezis, National Technical University of Athens
Lukasz Bonenberg, University of Nottingham
Gethin Wyn Roberts, University of Nottingham Ningbo

PS4: Server based Indoor Navigation using RSSI and Inertial Sensor Information

Manh Kha Hoang, Department of Communications Engineering, University of Paderborn
Sarah Schmitz, Department of Communications Engineering, University of Paderborn
Christian Drueke, Department of Communications Engineering, University of Paderborn
Dang Hai Tran Vu, Department of Communications Engineering, University of Paderborn
Joerg Schmalenstroeer, Department of Communications Engineering, University of Paderborn
Reinhold Haeb-Umbach, Department of Communications Engineering, University of Paderborn

PS5: A Tag Complexity Reduction Approach for Code-Based Cooperative Ranging Systems

Malek Chaabane, University of Munich
Erwin Biebl, University of Munich

PS6: Empirical Localisation Method for Wireless Sensor Nodes In Confined Industrial Processes

Michalis Antoniou, University of Manchester
P.N. Green, University of Manchester

PS7: Indoor localization on Mobile Phone Platforms with inertial sensor

Yang Liu, University of Sheffield
Marzieh Dashti, University of Sheffield
Jie Zhang, University of Sheffield