WPNC
Workshop on Positioning, Navigation and Communication

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

Workshop programme for 7th/8th of April 2011

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

Day 1 - 7th of April 2011

08:00 – 08:45	Registration
08:45 – 09:00	Welcome words from the organizers

SESSION 1 - Motion Tracking and Inertial Localization

09:00 – 09:20 — **S1MTIL1: A reduced DCM Based Attitude Estimation Using Low-cost IMU and Magnetometer**

Ezzaldeen Edwan, University of Siegen
Jieying Zhang, University of Siegen
Junchuan Zhou, University of Siegen
Otmar Loffeld, University of Siegen

09:20 – 09:40 — **S1MTIL2: On the Fusion of Inertial Data for Signal Strength Localization**

Johannes Schmid, Karlsruhe Institute of Technology
Tobias Gädeke, Karlsruhe Institute of Technology
Wilhelm Stork, Karlsruhe Institute of Technology
K.D. Müller-Glaser, Karlsruhe Institute of Technology

09:40 – 10:00 — **S1MTIL3: Positioning with an Inertial Measurements Unit using Interacting Multiple Models Filtering**

Furrukh Sana, Universitat Politecnica de Catalunya

[handwritten: Kalman Filter, Gauss-Newton Alg., Bancroft Alg., Levenberg Marquard Alg., Bewegungt Beschleunigung Sensoren, Laser+ kammera, Aktiv mit vielen Empfäng, Raytraucing]

10:00 – 10:20 — **S1MTIL4: Study on UWB/INS Integration Techniques**

Lukasz Zwirello, Karlsruhe Institute of Technology
Christian Ascher, Karlsruhe Institute of Technology
Gert F.Trommer, Karlsruhe Institute of Technology
Thomas Zwick, Karlsruhe Institute of Technology

10:20 – 10:40 — **S1MTIL5: UAV real-time location using a Wireless Sensor Network**

José-Luis Rullán-Lara, Université de Technologie de Compiègne
Sergio Salazar, LAFMIA UMI CNRS
Rogelio Lozano, Université de Technologie de Compiègne

[handwritten: Modelflugzeug, Flugzeug mit compass, IMU, 4 Motoren, U.Schall, Kalman Filter! Zombinavision der Messungen, Pilot steuert, Position wird gemessen]

10:45 – 11:15	**Coffee break**

SESSION 2 - Ranging Techniques

11:15 – 11:35 — **S2RT1: A Time Difference of Arrival System Architecture for GSM Mobile Phone Localization in Search and Rescue Scenarios** *[handwritten: TDoA Syst]*

Alexander Goetz, University Erlangen-Nuremberg
Stefan Zorn, University Erlangen-Nuremberg
Richard Rose, University Erlangen-Nuremberg
Georg Fischer, University Erlangen-Nuremberg
Robert Weigel, University Erlangen-Nuremberg

PS8: GNSS for Automotive Applications

Andreas Kahmann, OECON Products & Services GmbH
Stephan Ritter, OECON Products & Services GmbH
Timo Nels, OECON Products & Services GmbH

SESSION 3 – Cooperative and Distributed Localization *in Netzwerken*

13:50 – 14:10	**S3CDL1: Bayesian Outlier Detection in Location-aware Wireless Networks**

2.

Yi Li, Chalmers University of Technology
Dapeng Liu, Chalmers University of Technology
Henk Wymeersch, Chalmers University of Technology

wenn Antennen nicht funktionieren

LDPC

14:10 – 14:30	**S3CDL2: Multihop versus Message-Passing: a Complexity and Accuracy Comparison for Distributed Localization**

Stefano Severi, University of Bologna
Giuseppe Abreu, University of Oulu
Giuseppe Destino, University of Oulu
Davide Dardari, University of Bologna

14:30 – 14:50	**S3CDL3: Second Order Cone Programming for Sensor Network Localization with Anchor Position Uncertainty**

2.

Ghasem Naddafzadeh Shirazi, University of British Columbia
Michael Botros Shenouda, University of British Columbia
Lutz Lampe, University of British Columbia

14:50 – 15:10	**S3CDL4: A Network Traffic Reduction Method for Cooperative Positioning**

Kallol Das, Chalmers University of Technology
Henk Wymeersch, Chalmers University of Technology

15:15 – 15:30	Coffee break

15:30 – 16:05	Poster Session 2

PS9: Impact of Mobility on the Performance of Dynamic Cooperative Communications in SC-FDMA Systems

Youssef NASSER, American University of Beirut
Joumana Farah, Holy-Spirit University of Kaslik
Joseph Kirillos, Université Saint-Esprit de Kaslik
Stéphanie Bassil, Université Saint-Esprit de Kaslik
Maryline Helard, INSA Rennes

PS10: Influence of Oversampling on Joint Channel and Parameter Estimation for Combined Communication and Positioning

Kathrin Schmeink, University of Kiel
Rebecca Block, University of Kiel
Peter Adam Hoeher, University of Kiel

PS11: Mobile Sensors in Air Pollution Measurement

Dan Stefan Tudose, Politehnica University Bucharest
Andrei Voinescu, Politehnica University Bucharest
Traian Alexandru Patrascu, Politehnica University Bucharest
Razvan Tataroiu, Politehnica University Bucharest
Nicolae Tapus, Politehnica University Bucharest

SESSION 5 - Radar and Ultrasonic Localization

09:00 – 09:20 **S5RUL1: Channel Model-Based Sensing for Indoor Ultrasonic Location Systems**

Yun Lu, Dresden University of Technology
Adolf Finger, Dresden University of Technology

09:20 – 09:40 **S5RUL2: FMCW System Aspects for Multipath Environments**

Jens Wagner, Dresden University of Technology
Niko Joram, Dresden University of Technology
Axel Strobel, Dresden University of Technology
Ralf Eickhoff, Dresden University of Technology
Frank Ellinger, Dresden University of Technology

[handwritten: Rangeresolution / Reflexionen / Positioning error durch Multipath, Wie gut ist die Auflösung? berechnung, Hamming Window?]

09:40 – 10:00 **S5RUL3: Improving indoor position estimation by combining active TDOA Ultrasound and passive Thermal Infrared Localization**

Daniel Hauschildt, TU Dortmund University
Nicolaj Kirchhof, TU Dortmund University

10:00 – 10:20 **S5RUL4: Underwater Localization with Time-Synchronization and Propagation Speed Uncertainties**

Roee Diamant, University of British Columbia
Lutz Lampe, University of British Columbia

10:25 – 10:55 Coffee break

SESSION 6 - Localization Algorithms and Standardization

10:55 – 11:15 **S6LAS1: A Semidefinite Programming Approach to Hybrid Localization using RSSI and TOA**

Mohamed Laaraiedh, University of Rennes 1, IETR Lab
Stephane Avrillon, University of Rennes 1, IETR Lab
Nicolas Amiot, University of Rennes 1, IETR Lab
Bernard Uguen, University of Rennes 1, IETR Lab

11:15 – 11:35 **S6LAS2: Active Monte Carlo Localization using RF Round-Trip Time-of-Flight Measurements**

Daniel Fross, Chemnitz University of Technology
Andre Fross, Chemnitz University of Technology
Ulrich Heinkel, Chemnitz University of Technology

[handwritten: RFID, IEC 24730-61, 802.15.4F, 4,8 - 10,6 GHz, 500 MHz Bandbreite]

11:35 – 11:55 **S6LAS3: Standardization Activities for Radio based Ranging**

Michael Mahler, Bosch AG

[handwritten: beacon - only, UWB, ECC/DEC(06)04, ECC/DEC(12)06, EN 302 065, 302 500, 302 499 Medical]

11:55 – 12:15 **S6LAS4: RF-based Positioning and Localization Techniques in Wireless Sensor Networks using a C-MDS Approach**

Richard Weber, Dresden University of Technology
Robert Richter, Dresden University of Technology
Oliver Michler Dresden University of Technology
Sven Zeisberg, Dresden University of Applied Sciences

[handwritten: POA Definition nachschauen]