

WPNC 2019

Jacobs University Bremen



23th/24th October 2019, Bremen, Germany



Day 1 - 23th of October 2018
IRC Conference Room – Jacobs University Bremen

08:30 – 12:00 Registration

Located inside the conference room and operational continuously from 8:30 to 12:00.

08:50 – 09:00 Welcome and Opening Message

Giuseppe Abreu, Jacobs University Bremen
 Sven Zeisberg, Dresden University of Applied Sciences
 Valérie Renaudin, IFSTTAR
 Jérôme Härrä, Eurecom

KEYNOTE Invited Keynote Talk

09:00 – 9:50 Robot Localization in Challenging Environments

Prof. Dr. Francesco Maurelli, Jacobs University Bremen, Germany

SESSION 1 Positioning in 5G Networks

09:50 – 10:10 S1P1: Enabling Angle-based Positioning to 3GPP NR Systems

Yi Wang, Huawei Technologies Co., Ltd;
 Zhenyu Shi, Huawei Technologies Co., Ltd;
 Yingjie Yu, Huawei Technologies Co., Ltd;
 Su Huang, Huawei Technologies Co., Ltd;
 Lei Chen, Huawei Technologies Co., Ltd

10:10 – 10:30 S1P2: 5G Positioning -A Machine Learning Approach

Magnus E Malmström, Linköping University;
 Isaac Skog, Linköping University;
 Sara Modarres Razavi, Ericsson Research;
 Yuxin Zhao, Ericsson Research;
 Fredrik Gunnarsson, Ericsson Research

10:30 – 10:50 S1P3: High Precision Synchronization between Commercial WiFi-ICs and External Device

Alexey M. Romanov, RTU MIREA;
 Francesco Gringoli, Università degli Studi di Brescia;
 Axel Sikora, Offenburg University of Applied Sciences

10:50 – 11:10 S1P4: A New Position Quality Metric for NR RAT Dependent OTDOA Positioning Method

Ritesh Shreevastav, Ericsson;
 Giuseppe Destino, King's College Londo;
 Deep Shrestha, Ericsson;
 Iana Siomina, Ericsson;
 Toktam Mahmoodi, King's College London

11:10 – 11:30 Coffee Break (20 mins)

Coffee, tea and other drinks served along with fruits, cookies and more.

SESSION 2 Advanced Algorithms for Positioning and Ranging

11:30 – 11:50 S2P1: The Statistical Analysis of Noise in Triaxial Magnetometers and Calibration Procedure

Nhan D Nguyen, Tampere Univerisity;
 Philipp Muller, Tampere University;
 Jussi Collin, Tampere University


11:50 – 12:10 S2P2: Indoor distance estimation using LSTMs over WLAN network

Pranav M Sankhe, IIT BOMBAY;
 Saqib Azim, IIT BOMBAY;
 Sachin Goyal, IIT BOMBAY;
 Tanya Choudhary, IIT BOMBAY;
 Kumar Appaiah, IIT BOMBAY;
 Srikant Sukumar, IIT BOMBAY

12:10 – 12:30 S2P3: Detection of Feature Areas for Map-based Localization Using LiDAR Descriptors

Constanze Hungar, Volkswagen AG;
 Jenny Fricke, Volkswagen AG;
 Stefan Jürgens, MAN Truck & Bus AG;
 Frank Köster DLR e.V.

12:30 – 12:50 S2P4: Robust Elliptic Localization using Worst-Case Formulation and Convex Approximation

Wenxin Xiong, University of Freiburg;
 Hing Cheung So, City University of Hong Kong;
 Christian Schindelhauer, University of Freiburg;
 Johannes Wendeberg, University of Freiburg

12:50 – 13:50 Lunch Break

Lunch at one of the serveries at Jacobs Campus (voucher included with registration)

13:50 – 14:00 Pre-session Coffee (10 mins)

Coffee, tea and other drinks served along with fruits, cookies and more.

SESSION 3 Positioning in IoT and Industrial Networks
14:00 – 14:20 S3P1: A Reproducible Comparison of RSSI Fingerprinting Localization Methods Using LoRaWAN

Grigorios G. Anagnostopoulos, Geneva School of Business Administration, HES-SO Geneva;
 Alexandros Kalousis, University of Applied Sciences, Western Switzerland

14:20 – 14:40 S3P2: Benchmarking of Narrowband LPWA Ranging Technologies

Florian WOLF, CEA-Leti/University of Limoges;
 Kévin Le Déroff, CEA-Leti;
 Sébastien De Rivaz, CEA-Leti;
 Nicolas Deparis, CEA-Leti;
 François DEHMAS, CEA-Leti;
 Jean-Pierre Cances, University of Limoges

14:40 – 15:00 S3P3: A Parametric TDoA Technique in the IoT Localization Context

Ahmed Abdel Ghany, University of Rennes 1

15:00 – 15:20 S3P4: E-SALDAT: Efficient Single-Anchor Localization of Dual-Antenna Tags

Leo H Botler, Graz University of Technology;
 Konrad Diwold, Pro2future;
 Kay Römer, Graz University of Technology


15:20 – 15:40 Coffee Break (20 mins)

Coffee, tea and other drinks served along with fruits, cookies and more.

SESSION 4 UWB Positioning and Ranging
15:40 – 16:00 S4P1: Localization and communication resource budgeting for multi-user mm-Wave MIMO

Remun Koirala, CEA Leti;
 Benoit Denis, CEA-Leti;
 Bernard Uguen, University of Rennes 1 - IETR, France;
 Davide Dardari, DEIS-University of Bologna, Italy;
 Henk Wymeersch, Chalmers Univ. of Techn., Sweden

16:00 – 16:20 S4P2: Periodic Ambiguity Function as a Tool in Designing Periodic Synchronization Preamble

Igor Dotlic, Decawave

16:20 – 16:40 S4P3: A Comparative Study of UWB-based True-Range Positioning Algorithms using Experimental Data

Cung Lian Sang, Bielefeld University;
 Michael Adams, Bielefeld University;
 Marc Hesse, Bielefeld University;
 Timm Hörmann, Bielefeld University;
 Timo Korthals, Bielefeld University;
 Ulrich Rückert, Bielefeld University

16:40 – 17:00 S4P4: Modeling the Magnitude and Phase of Multipath UWB Signals for the Use in Passive Localization

Marco Cimdins, Technische Hochschule Luebeck - University of Applied Sciences;
 Sven Ole Schmidt, Technische Hochschule Luebeck - University of Applied Sciences;
 Horst Hellbrück, Technische Hochschule Luebeck - University of Applied Sciences

SPECIAL SESSION WPNC Traditional Beer Session with Exhibitors
2019 Awards Announcements

17:00 – 19:00 Take advantage of the opportunity to discuss further with your colleagues and industry exhibitors while enjoying **free beer** and snacks!



Day 2 - 24th of October 2018
IRC Conference Room – Jacobs University Bremen

08:30 – 10:30 Registration

Located inside the conference room and operational continuously from 8:30 to 10:30.

09:00 – 09:10 Morning Message and Housekeeping Information

Giuseppe Abreu, Jacobs University Bremen

SESSION 5 Positioning for Navigation and Robotics

09:10 – 09:30 S5P1: Location Privacy Preservation and Location-based Service Quality Tradeoff Framework Based on Differential Privacy

Tianyi Feng, National University of Singapore;
Wai Choong Wong, National University of Singapore;
Sumei Sun, Institute for Infocomm Research, A*STAR;
Yonghao Zhao, National University of Singapore;
Zhixiang Zhang, National University of Singapore

09:30 – 09:50 S5P2: System-level Simulation of Cooperative Sensor Data Fusion Strategies for Improved Vulnerable Road Users Safety

Alex P Da Silva, CEA-LETI;
Imane Horiya Brahmi, CEA-LETI;
Sylvain Leirens, CEA-LETI;
Benoit Denis, CEA-Leti

09:50 – 10:10 S5P3: Multi-Mode Antenna Enabled Direction-of-Arrival Estimation for Swarm Navigation

Robert Pöhlmann, German Aerospace Center (DLR) ;
Gonzalo Pedregosa, German Aerospace Center (DLR) ;
Stefano Caizzzone, German Aerospace Center (DLR) ;
Emanuel Staudinger, German Aerospace Center (DLR);
Peter A. Hoeher, Faculty of Engineering, University of Kiel

10:10 – 10:30 S5P4: 3D Performance Analysis of a UWB Positioning System in a Dynamic Robotic Scenario

Markus Pichler-Scheder, Linz Center of Mechatronics GmbH;
Klaus Pendl, Linz Center of Mechatronics GmbH;
Richard Schmidt, Linz Center of Mechatronics GmbH;
Michael Petruzella, KEBA AG;
Günther Mühlberger, KEBA AG

10:30 – 10:50 Coffee Break (20 mins)

Coffee, tea and other drinks served along with fruits, cookies and more.



SESSION 6 High-precision Positioning and Ranging

10:50 – 11:10 S6P1: Precise Probabilistic Grid Positioning based on GNSS Pseudoranges and Digital Elevation Models

Paul Schwarzbach, TU Dresden;
Andrea Jung, TU Dresden;
Richard Weber, TU Dresden;
Oliver Michler, TU Dresden

11:10 – 11:30 S6P2: Efficient Use of SSR RTCM Streams For Real-Time Precise Point Positioning on Smartphones

Antoine Grenier, IFSTTAR;
Valérie Renaudin, IFSTTAR, France

11:30 – 11:50 S6P3: A 400 Msps SDR platform for prototyping accurate wideband ranging techniques

Cherif Diouf, TU DELFT;
Tarik Kazaz, TU DELFT;
Gerard Janssen, TU DELFT;
Han Dun, TU DELFT;
Farnaz Chaman Zadeh, TU DELFT;
Christiaan Tiberius, TU DELFT

11:50 – 12:10 S6P4: Comparative Examination of Iterative and Non-Iterative Algorithms for Partial Discharge Location Approximation in High Voltage Equipment

Máté Szirtes, Budapest University of Technology and Economics;
Richárd Cselkó, Budapest University of Technology and Economics

12:10 – 12:20 Closing Words

Giuseppe Abreu, Jacobs University Bremen
Sven Zeisberg, Dresden University of Applied Sciences
Valérie Renaudin, IFSTTAR
Jérôme Härrä, Eurecom

12:20 – 14:00 Lunch Break

Lunch at one of the serveries at Jacobs Campus (voucher included with registration)