

ICL-GNSS 2023 PROGRAMME

Tuesday, June 6, 2023

- 10:00am – 10:20 am **Opening**
- Session Chairs: Joaquin Huerta, Universidad Jaume I, Joaquin Torres Sospedra, Univ. of Minho
- 10:20am – 11:20am **Keynote: Carlos Alcaide, iTEAM, UPV, Spain**
Multipactor Effect on GNSS Signals
- Session Chair: Joaquin Torres Sospedra, Univ. of Minho
- 11:20am – 12:00pm Coffee break
- 12:00pm – 1:00pm **Special Session: Galileo OSNMA**
- Session Chair: Sophie Damy, European Commission, Joint Research Centre
- 12:00 Statistical Characterization of Snapshot OSNMA Spoofing Detection
Husnain Shahid^{1,2}, Luca Canzian³, Carlo Sarto³, Oscar Pozzobon³, Joaquín Reyes-González⁴,
Gonzalo Seco-Granados^{1,2}, José A. López-Salcedo^{1,2}
*1: Universitat Autònoma de Barcelona, Spain; 2: IEEC-CERES, Barcelona, Spain; 3: Qascom
SrL, Bassano del Grappa, Italy; 4: EUSPA, Prague, Czech Republic*
- 12:20 An Experimental Performance Assessment of Galileo OSNMA
Toni Hammarberg, José M. Vallet García, Jarno N. Alanko, Mohammad Zahidul Hasan
Bhuiyan; *Finnish Geospatial Research Institute FGI, Finland*
- 12:40 Increasing the Robustness of Drone Operations with Galileo Open Service Navigation
Message Authentication (OSNMA)
Sophie Damy¹, Luca Cucchi¹, Alberto Mennella², Gianluca Luisi², Matteo Paonni¹, Ignacio
Fernandez-Hernandez³
*1: Joint Research Centre, European Commission, Italy; 2: TopView S.r.l, Italy; 3: DG DEFIS,
European Commission, Belgium*
- 1:00pm – 3:00pm Lunch
- 3:00pm – 4:00pm **Security and Privacy**
- Session Chair: Aleksandr Ometov, Tampere University
- 15:00 Acceptable Margin of Error: Quantifying Location Privacy in BLE Localization
Viktoriiia Shubina^{1,2}, Aleksandr Ometov¹, Dragos Niculescu², Elena Simona Lohan¹
1: Tampere University, Finland; 2: University 'Politehnica' of Bucharest, Romania
- 15:20 Privacy-aware location accuracy in cooperative wearable networks
Elena Simona Lohan¹, Viktoriiia Shubina^{1,2}
1: Tampere University, Finland; 2: University 'Politehnica' of Bucharest, Romania
- 15:40 Secure Communication via GNSS-based Key Synchronization
Maki Yoshida¹, Sumio Morioka², Satoshi Obana³
1: NICT, Japan; 2: Interstellar Technologies Inc., Japan; 3: Hosei University, Japan

- 4:00pm – 4:40pm Coffee break
- 4:40pm – 5:20pm ***Special Session: Positioning in GNSS-denied environments and collaborative localization methods***
 Session Chair: Tomi Westerlund, University of Turku
- 16:40 Robust Inertial Post-Processing Aided by Trimble ProPoint GNSS Technology for Urban HD Mapping and Autonomous Navigation
 Jau-Hsiung Wang
Trimble Navigation Limited, Canada
- 17:00 UAV Tracking with Lidar as a Camera Sensors in GNSS-Denied Environments
 Sier Ha^{1,2}, Xianjia Yu², Iacopo Catalano², Jorge Pena Queralta², Zhuo Zou¹, Tomi Westerlund²
 1: Fudan Universtiy, Shanghai, China; 2: University of Turku, Finland
- 17:20 end of program
- 7 pm – 9 pm Reception at Hotel Intur Bonaire's garden, Av. Gimeno Tomás, 3-1, Benicàssim

Wednesday, June 7, 2023

- 9:50am Opening of the second day
- 10:00am – 11:00am ***Keynote: Maarten Weyn, IDLab, University of Antwerp, Belgium Potential of LEO for Outdoor/indoor Localization***
 Session Chair: Joaquin Torres Sospedra, Univ. of Minho
- 11:00am – 11:40am Coffee break
- 11:40am - 1:00pm ***Neural Networks in Positioning***
 Session Chair: Joaquin Torres Sospedra, Univ. of Minho
- 11:40 RNN-Based GNSS Positioning using Satellite Measurement Features and Pseudorange Residuals
 Ibrahim Sbeity^{1,2}, Christophe Villien¹, Benoît Denis¹, E. Veronica Belmega^{2,3}
 1: CEA-Leti, Universite Grenoble Alpes, France; 2: ETIS UMR 8051, CY Cergy Paris Universite, ENSEA, CNRS, France; 3: Univ. Gustave Eiffel, CNRS, LIGM, France
- 12:00 Deep Learning Based Kalman Filter for GNSS/INS Integration: Neural Network Architecture and Feature Selection
 Shuo Li^{1,3}, Maxim Mikhaylov², Nikolay Mikhaylov¹, Thomas Pany³
 1: Robert Bosch GmbH, Germany; 2: ITMO University, Russia; 3: Bundeswehr University Munich, Germany
- 12:20 Convolutional neural network based approach for estimating ionospheric delay from GNSS observables
 Mika Saajasto, Maija Mäkelä, Fabricio S. Prol, M. Zahidul H. Bhuiyan, Sanna Kaasalainen
Finnish Geospatial Research Institute FGI, Finland
- 12:40 Fast and Precise Neural Network-Based Environment Detection utilizing UWB CSI for Seamless Localization Applications
 Ghazaleh Kia¹, David Plets², Ben Van Herbruggen², Jaron Fontaine², Leen Verloock², Eli De Poorter², Jukka Talvitie³
 1: University of Helsinki, Finland; 2: Ghent University-imec, Belgium; 3: Tampere University, Finland

- 1:00pm – 3:00pm Lunch
- 3:00pm – 3:40pm **Indoor Positioning**
Session Chair: Joaquin Huerta, Universidad Jaume I
- 15:00 Time-multiplexed AoA Estimation and Ranging
David Märzinger, Bernhard Etzlinger, Philipp Peterseil, Andreas Springer
Johannes Kepler University Linz, Austria
- 15:20 Indoor Asset Tracking in Dense Industrial Environments Using Low-cost Wireless Technologies
Mahmoud Elsanhoury¹, Jyri Nieminen¹, Petri Välisuo¹, Akpo Siemuri¹, Janne Koljonen¹, Mohammed Elmusrati¹, Heidi Kuusniemi^{1,2}
1: University of Vaasa, Finland.; 2: National Land Survey, Finnish Geospatial Institute FGI, Finland
- 3:40pm – 4:20pm Coffee break
- 4:20pm – 5:00pm **Special Session: Low complexity/low energy consumption solutions in positioning and communications**
Session Chair: Aleksandr Ometov, Tampere University
- 16:20 Will Edge Computing Enable Location based Extended/Mixed Reality Mobile Gaming?
Demystifying Trade-off of Execution Time vs. Energy Consumption
Aleksandr Ometov, Jari Nurmi
Tampere University, Finland
- 16:40 Towards Benchmarking GNSS Algorithms on FPGA using SyDR
Antoine Grenier¹, Hans Jakob Damsgaard¹, Jie Lei², Enrique S. Quintana-Ortí², Aleksandr Ometov¹, Elena Simona Lohan¹, Jari Nurmi¹
1: Tampere University, Finland; 2: Universitat Politècnica de València, Spain
- 17:00 End of program
- 9 pm – 12 am *Gala Dinner at Hotel Voramar, Paseo Pilar Coloma 1, Benicassim*

Thursday, June 8, 2023

- 9:55am Opening of the third day
- 10:00am – 11:00am **Keynote: Estefanía Díaz, Motius, Germany**
Mobility in smart cities: can you use the subway for free by deceiving your smartphone's GNSS receiver?
Session Chair: Joaquin Torres Sospedra, Univ. of Minho
- 11:00am – 11:40am Coffee break

PARTICIPANTS

Carlos	Alcaide Guillen	Universitat Politècnica de València	Spain
		European Commission, Joint	
Sophie	Damy	Research Centre	Italy
Vladimir	Dolgovskiy	Oscilloquartz SA	Switzerland
Guillem	Foreman Campins	Universitat Autònoma de Barcelona	Spain
Michael	Gould	Universitat Jaume I	Spain
Antoine	Grenier	Tampere University	Finland
Toni	Hammarberg	Finnish Geospatial Research Institute	Finland
Joaquin	Huerta	Universitat Jaume I	Spain
Ghazaleh	Kia	SEAFAR	Belgium
Mikko	Kotilainen	NLS FGI	Finland
Jie	Lei	Universitat Politecnica De Valencia	Spain
		Robert Bosch GmbH & Universität	
Shuo	Li	der Bundeswehr München	Germany
Jose A.	Lopez-Salcedo	Universitat Autònoma de Barcelona	Spain
Sumio	Morioka	Interstellar Technologies Inc.	Japan
Estefania	Muñoz Diaz	German Aerospace Center	Germany
Luciano	Musumeci	European Space Agency	The Netherlands
David	Märzinger	Johannes Kepler University	Austria
Satoshi	Obana	Hosei University	Japan
Aleksandr	Ometov	Tampere University	Finland
Xurxo	Otero Villamide	European Space Agency	Netherlands
Lucia	Pallares Rodriguez	Universitat Autònoma de Barcelona	Spain
Karen	Ravel	ESA ESTEC	Netherlands
Mika	Saajasto	FGI	Finland
Ibrahim	Sbeity	CEA	France
Husnain	Shahid	Universitat Autònoma de Barcelona	Spain
Viktoriia	Shubina	Tampere University	Finland
Enik	Shytermeja	ESA	Netherlands
Akpojoto	Siemuri	University of Vaasa	Finland
Joaquín	Torres-Sospedra	Universidade do Minho	Portugal
Jau-Hsiung	Wang	Trimble Applanix	Canada
Tomi	Westerlund	University of Turku	Finland
Maarten	Weyn	University of Antwerp	Belgium
Zhe	Yan	University of Helsinki	Finland
		National Institute of Information and	
Maki	Yoshida	Communications Technology	Japan