



IFAC TA 22

6th IFAC Symposium on Telematics Applications
Technical program

June 15-17 2022
Congress centre Prouvé, Nancy

Sponsors:



Wednesday June 15th, 2022 – Room 201, 2nd floor

08.30-09.00	Registration
09.00-09.20	Opening ceremony
09.20-10.20	Digital transformation – the key to efficiency. Sébastien Wiertz <i>Chair: Jérémy Robert</i>
10.20-10.40	Coffee break
10.40-12.40	Session 1: Industry 4.0 <i>Chairs: Lei Ma, Klaus Schilling</i> <ul style="list-style-type: none">• Advanced Edge Detection of AprilTags for Precise Docking Maneuvers of Mobile Robots Jan Richter, David Bohlig, Andreas Nüchter, Klaus Schilling• A Simple Path-Aware Optimization Method for Mobile Robots Tudor Santejudean, Lucian Busoniu, Vineeth Satheeskumar Varma, Irinel Constantin Morarescu• A Dual-Robot Cooperative Welding Path Planning Algorithm Based on Improved Ant Colony Optimization Qingyi Wang, Yongkui Sun, Qichao Tang, Lei Ma, Duo Zhao, Jianping Yang, Jian Xu• Quality Inspection for the Body-in-white Assembly of High-Speed Train Carriage Based on Machine Vision Ruichen Li, Lei Ma, Qichao Tang, Yongkui Sun, Bin Su
12.40-14.00	Lunch
14.00-16.00	Invited Session 2: Telematics Digital Twins Applications <i>Chairs: Nathalie Julien, William Derigent, Michaël David</i> <ul style="list-style-type: none">• Social Cyber-Physical Systems and Digital Twins Networks: A Perspective about the Future Digital Twin Ecosystems Mohammed Adel Hamzaoui, Nathalie Julien• Autonomous Wireless Sensors Network for the Implementation of a Cyber-Physical System Monitoring Reinforced Concrete Civil Engineering Structures Gaël Loubet, Alassane Sidibe, Alexandru Takacs, Daniela Dragomirescu• Materials Communicating with the BIM: Results of the McBIM Project William Derigent, Michael David, Hang Wan, Daniela Dragomirescu, Alexandru Takacs, Gaël Loubet, Ana Maria Roxin, Roland Melet, Laurent Montegut• Digital Twin Network for the IIoT Using Eclipse Ditto and Hono Mehdi Kherbache, Moufida Maimour, Eric Rondeau
16.00-16.20	Coffee break
16.20-18.20	Special session RED WoLF Rethink Electricity Distribution Without Load Following <i>Chairs: Giuseppe Colantuono, Éric Rondeau</i> <ul style="list-style-type: none">• The RED WoLF Project: Underlying Physical and Algorithmic Ideas Giuseppe Colantuono• Greenhouse Gas Emission Reduction in Residential Buildings: Comparison between Two Algorithms Paul Ortiz• Why Oldham Has Chosen to Deliver Two RED WoLF Pilots, How We Are Doing This in Practice and What Ppportunities Are There for the Future Ben Hill, Jamie Smith• CO2 Minimization in a Community With a Shared Battery Sebai Walid

Thursday June 16th, 2022 – Room 201, 2nd floor

08.40-09.00	Registration
09.00-10.00	IFAC TC3.3 meeting <i>Chair:</i> Lei Ma
10.00-10.20	Coffee break
10.20-12.20	Session 3: Control of networks <i>Chairs:</i> Karl-Erik Arzen, Danfeng Sun <ul style="list-style-type: none">• Vickrey-Clarke-Groves Auction-Based Storage Allocation for Distributed Camera Systems Alexandre Martins, Karl-Erik Arzen, Hung-Yu Wei• Critical Logical Link Assessment for Improving Industrial Wireless Communication Systems Danfeng Sun, Zeyun Xiao, Gustavo Cainelli, Jianyong Zhao, Huifeng Wu• Multi-criteria detection method for non-determinist SDN control Loïc Desgeorges, Jean-Philippe Georges, Thierry Divoux• Adapting the number of validator according the need in a BFT chain with SABINE Guilain Leduc, Sylvain Kubler, Jean-Philippe Georges
12.20-14.00	Lunch
14.00-15.30	Session 4a: Remote sensors, data acquisition <i>Chairs:</i> Helge Andreas Lauterbach, Éric Rondeau <ul style="list-style-type: none">• Pose estimation and mapping based on IMU and LiDAR Janis Kaltenthaler, Helge Andreas Lauterbach, Dorit Borrmann, Andreas Nüchter• An Energy-Efficient WMSN-based System for Endangered Birds Monitoring Aya Sakhri, Moufida Maimour, Eric Rondeau, Nouredine Doghmane, Saliha Hariz• Reinforcement Learning TDMA-Based MAC Scheduling in the Industrial Internet of Things: A Survey Mehdi Kherbache Mehdi, Otabek Sobirov Otabek, Moufida Maimour, Eric Rondeau, Abderrezak Benyahia
15.30-16.00	Coffee break
16.00-17.00	Session 4b: Remote sensors, data acquisition <i>Chairs:</i> Helge Andreas Lauterbach, Éric Rondeau <ul style="list-style-type: none">• Driver vigilance estimation with Bayesian LSTM Auto-encoder and XGBoost using EEG/EOG data Rachid Zeglache, Mohamed Aymen Labiod, Abdelhamid Mellouk• Resilience and Robustness in Visible Light Positioning Systems: An introductory Approach Cristobal Carreño, Nicolas Krommenacker, Patrick Charpentier
19.00	Gala dinner <i>Hôtel de la Reine, Place Stanislas, Nancy</i>

Friday June 17th, 2022 – Room 201, 2nd floor

08.40-09.00	Registration
09.00-10.30	Session 5: Energy issues <i>Chairs:</i> Karl Andersson, Michel Kieffer <ul style="list-style-type: none">• Energy-Efficient Transmission Policies For The Linear Quadratic Control of Scalar Systems Yifei Sun, Samson Lasaulce, Michel Kieffer, Romain Postoyan, Dragan Nesic• CANO: A Lightweight CARbon Emission and Inhabitants' Energy Needs Optimisation Model Paul Ortiz, Sylvain Kubler, Eric Rondeau• Energy-Efficient Routing for Cooperative Multi-AUV System M. shamim Kaiser, Mohammad Shahadat Hossain, Mufti Mahmud, Karl Andersson
10.30-10.50	Coffee break
10.50-12.00	Special session: EMJMD GENIAL thesis – Green networking <i>Chair:</i> Jean-Philippe Georges
12.00-12.20	Closing ceremony
12.20-14.00	Lunch