

## ELMAR-2021 PROGRAM OVERVIEW

Monday 13 September 2021	Tuesday 14 September 2021	Wednesday 15 September 2021
8:30 - 12:15 <b>Registration</b>	8:45 - 9:00, 10:25 - 11:00 <b>Registration</b>	8:45 - 9:00, 10:25 - 11:00 <b>Registration</b>
9:00 - 9:30 <b>OPENING SESSION: Welcome Speeches</b>	9:00 - 10:25 <b>HALL A: Wireless Communications HALL B: Autonomous Vehicles</b>	9:00 - 10:25 <b>HALL A: Radar Systems HALL B: Image and Video Processing 2</b>
9:30 - 10:00 <b>Opening Cocktail</b>	10:25 - 11:00 <b>Coffee Break</b>	10:25 - 11:00 <b>Coffee Break</b>
10:00 - 12:15 <b>PLENARY SESSION: Keynote Talks (3)</b>	11:00 - 12:40 <b>HALL A: Antennas and Propagation HALL B: Image and Video Processing 1</b>	11:00 - 12:10 <b>HALL A: Satellite Technologies and Industry 4.0 HALL B: Intelligent Transport Systems</b>
12:15 - 14:00 <b>Lunch Break</b>	12:40 - 14:00 <b>Lunch Break</b>	12:10 - 12:30 <b>CLOSING SESSION</b>
14:30 - 17:00 <b>Special Session on 5G</b> <i>* In Croatian</i>	15:00 - 20:00 <b>EXCURSION</b> <i>Meeting point: Hotel "Funimation", Main Entrance 14:45</i>	12:30 - 14:00 <b>Lunch</b>
21:00 <b>ELMAR-2021 SYMPOSIUM GALA DINNER</b>		

# Monday, 13 September 2021

8:30 - 12:15      **Registration**

**PLENARY HALL**

**Monday, 13 September 2021**

9:00 - 9:30      **OPENING SESSION: Welcome Speeches**

**Session Chairs:**    Branka Zovko-Cihlar, Mario Muštra

9:30 - 10:00      **OPENING COCKTAIL**

10:00 - 12:15      **PLENARY SESSION: Keynote Talks**

**Session Chairs:**    Branka Zovko-Cihlar, Mario Muštra

**Prof. Peter Peer; SLOVENIA**

Overview of Privacy-Enhancing Face Biometrics

**Prof. Silvio Hrabar; CROATIA**

21 Years of Metamaterials at University of Zagreb: From Infancy to Adulthood

**Tihomir Divjak; SERBIA**

Importance and role of satellite communications in times of climate changes and CORONA pandemic

12:15 - 14:00      **Lunch Break**

14:30 - 17:00      **Special Session on 5G**

*\* Session will be held in Croatian language*

21:00                **ELMAR-2021 SYMPOSIUM GALA DINNER**

Hotel "Funimation", 21:00

## Tuesday, 14 September 2021

8:45 - 9:00, 10:25 - 11:00

Registration

**HALL A**

**Tuesday, 14 September 2021**

9:00 - 10:25

**Wireless Communications**

**Session Chairs: Jelena Božek, Marijan Herceg**

**Jiri Skorepa, Filip Sturc, Pavel Puricer, Pavel Kovar; CZECH REPUBLIC**  
VHF/UHF Transceiver with Digital Signal Processing

**Vincent Omollo Nyangaresi; KENYA**  
ECC Based Authentication Scheme for Smart Homes

**Suad Suljovic, Dragana Krstic, Nenad Petrovic; SERBIA**  
Derivation and Simulation of Outage Probability for 5G Wireless System with L-branch SC Receiver Influenced by Rician Fading and Nakagami-m Co-channel Interference

**Alen Lustica, Marko Jurcevic, Jelena Bozek; CROATIA**  
Live UHD/4K Video Transmission over 5G Network

**Ivana Žeger, Gordan Šišul; CROATIA**  
Introduction to Deep Learning Possibilities in Communication Systems

10:25 - 11:00

**Coffee Break**

11:00 - 12:40      **Antennas and Propagation**

**Session Chairs:**    **Silvio Hrabar, Josip Lončar**

**Mario Kupresak, Tomislav Marinovic, Xuezhong Zheng, Guy A. E. Vandenbosch, Victor V. Moshchalkov; BELGIUM, SWEDEN**

Nonlocal Response of Plasmonic Nanostructures Excited by Dipole Emitters

**Mariem Abdi, Raja Mchaalia, Taoufik Aguil; TUNISIA**

Wave Propagation Analysis of a Millimeter-Wave Slotted Metallic Waveguide Feed Technique with MOM-GEC Method

**Francesco D'Agostino, Flaminio Ferrara, Claudio Gennarelli, Rocco Guerriero, Massimo Migliozzi; ITALY**

A NF-FF Transformation with Planar Wide-Mesh Scanning Optimized for Flat Antennas

**Leo Vincelj, Silvio Hrabar; CROATIA**

Influence of Load Resonance on Operation of Negative Impedance Converter Circuits

**Dominik Zanic, Robert Gotal, Silvio Hrabar; CROATIA**

Multi-band Antenna System for Fully Connected Smart E-bicycle

**Silvio Hrabar, Ivan Cavlek, Davorin Mikulic, Srdan Milic, Evita Sopp; CROATIA**

Extension of Non-Foster-inspired Two-transmitter Matching to Arbitrary Antenna Impedance

12:40 - 14:00      **Lunch Break**

15:00 - 20:00      **EXCURSION**

Meeting Point: Hotel "Funimation", Main Entrance, 14:45

9:00 - 10:25

**Autonomous Vehicles****Session Chairs: Mario Muštra, Mario Vranješ****Srđan Dragaš, Ratko Grbić, Matteo Brisinello, Krsto Lazić; CROATIA, SERBIA**

Development and implementation of lane departure warning system on ADAS Alpha board

**Domagoj Špoljar, Mario Vranješ, Sandra Nemet, Nebojša Pjevalica; CROATIA, SERBIA**

Lane Detection and Lane Departure Warning Using Front View Camera in Vehicle

**Marko Kuprešak, Mario Vranješ, Denis Vajak, Dušan Živkov; CROATIA, SERBIA**

Solution for Autonomous Vehicle Parking

**Gerald Joy Sequeira, Bhuvan Harlapur, David Obando Ortegon, Robert Lugner, Thomas Brandmeier, Valentin Soloiu; GERMANY, USA**

Investigation of Influence From Variation in Color on LiDAR Sensor for Perception of Environment in Autonomous Vehicles

**Jasmin Velagić, Imran Kovač, Adis Panjević, Adnan Osmanović; BOSNIA AND HERZEGOVINA**

Design and Control of Two-Wheeled and Self-Balancing Mobile Robot

10:25 - 11:00

**Coffee Break**

11:00 - 12:40      **Image and Video Processing 1**

**Session Chairs:**    Irena Galić, Lidija Mandić

**Ana Vranković, Ivo Ipšić, Jonatan Lerga; CROATIA**

Entropy-Based Extraction of Useful Content from Spectrograms of Noisy Speech Signals

**Marin Benčević, Marija Habijan, Irena Galić; CROATIA**

Epicardial Adipose Tissue Segmentation from CT Images with a Semi-3D Neural Network

**Ana Svalina, Jesenka Pibernik, Jurica Dolić, Lidija Mandić, CROATIA**

Data Visualizations for the Internet of Things Operational Dashboard

**Arpad Kis, Horia Balta, Cosmin Ancuti; ROMANIA**

Underwater Image Enhancement on Low-Cost Hardware Platform

**Arpad Kis, Horia Balta, Cosmin Ancuti; ROMANIA**

The Impact of Haze Non-Homogeneity on the Recent Image Dehazing Methods

**Eugen Šimara, Marijan Herceg, Denis Vranješ, Aleksa Zejak; CROATIA, SERBIA**

An algorithm for Vehicle Distance and Speed Estimation

12:40 - 14:00      **Lunch Break**

15:00 - 20:00      **EXCURSION**

Meeting Point: Hotel "Funimation", Main Entrance, 14:45

# Wednesday, 15 September 2021

8:45 - 9:00, 10:25 - 11:00

Registration

**HALL A**

**Wednesday, 15 September 2021**

9:00 - 10:25

**Radar Systems**

**Session Chairs: Marko Bosiljevac, Mario Muštra**

**Pavel Sedivy, Jan Pidanic; CZECH REPUBLIC**

Doppler Frequency Estimation using Moving Target Detection Filter Bank

**Tomas Zalabsky, Pavel Bezousek, Tomas Krejci; CZECH REPUBLIC**

Broadband Waveguide to Coax Adapter for Measurement of Harmonic Distortion of Power Amplifier

**Michal Mandlik, Vladimir Brazda, Martin Paclik, Milan Kvicera, Naiallen Carvalho, Tomas Nouza, Ondrej Kozak, Christian Sturm; CZECH REPUBLIC, GERMANY**

Automotive Radar – Road Boundary Estimation

**Filip Turčinović, Marin Erny, Marko Bosiljevac; CROATIA**

Polarization Sensitivity of Short-Range S-band Radar Sensing System

10:25 - 11:10

**Coffee Break**

11:00 - 12:10      **Satellite Technologies and Industry 4.0**

**Session Chairs:**    **Krešimir Malarić, Josip Vuković**

**Karla Sever, Ivan Indir, Ivan Vnučec, Josip Lončar; CROATIA**

Evaluation of Gradient Descent Algorithm for Attitude Estimation

**Ivan Indir, Karla Sever, Ivan Vnučec, Josip Lončar; CROATIA**

Design and Optimization of Air Core Magnetorquers for Attitude Control of LEO Nanosatellites

**Krešimir Malarić, Bosiljka Šaravanja, Tanja Pušić; CROATIA**

Satellite Insulation Blankets with Conductive Threads Mesh as an Electromagnetic Shield

**Sune Chung Jepsen, Torben Worm, Aslak Johansen, Sanja Lazarova-Molnar, Mikkel**

**Baun Kjærgaard, Eun-Young Kang, Jonas Friederich, Juan Esteban Heredia Mena,**

**Reza Soltani, Sune Lundø Sørensen, Jens Hjort Schwee; DENMARK**

A Research Setup Demonstrating Flexible Industry 4.0 Production

12:10 - 12:30      **CLOSING SESSION**

12:30 - 14:00      **Lunch**



9:00 - 10:25 **Image and Video Processing 2**

**Session Chairs: Sonja Grgić, Ratko Grbić**

**Juraj Škunda, Jaroslav Polec, Boris Nerušil, Eva Málišová; SLOVAKIA**  
Schizophrenia Detection Using Convolutional Neural Network

**Luka Omrčen, Hrvoje Leventić; CROATIA**  
Integration of Blockchain and AI in EHR sharing: A survey

**Hrvoje Ditrih, Sonja Grgić, Leona Turković; CROATIA**  
Real-Time Detection and Recognition of Cards in the Game of Set

**Darko Janeković, Dario Bojanjac; CROATIA**  
Randomized Algorithms For Singular Value Decomposition: Implementation And Application Perspective

**Alen Duspara, Mario Kovač, Hrvoje Mlinarić; CROATIA**  
Discrete Cosine Transform Hardware Accelerator in Parallel Ultra-low Power System

10:25 - 11:00 **Coffee Break**

11:00 - 12:10      **SPECIAL SESSION: Intelligent Transport Systems**

**Session Chairs: Sadko Mandžuka, Mario Muštra**

**Leo Tišljarić, Dominik Cvetek, Valentin Vareškić, Martin Gregurić; CROATIA**  
Classification of Travel Modes from Cellular Network Data Using Machine Learning Algorithms

**Mladen Miletić, Edouard Ivanjko, Sadko Mandžuka, Daniela Koltovska Nečoska; CROATIA, NORTH MACEDONIA**  
Combining Neural Gas and Reinforcement Learning for Adaptive Traffic Signal Control

**Filip Vrbanić, Mladen Miletić, Edouard Ivanjko, Željko Majstorović; CROATIA**  
Creating Representative Urban Motorway Traffic Scenarios: Initial Observations

**Renato Ivče, Astrid Zekić, Đani Mohović, Antoni Krišković; CROATIA**  
Review of Ballast Water Management

12:10 - 12:30      **CLOSING SESSION**  
*In Hall A*

12:30 - 14:00      **Lunch**