

ELMAR-2022 PROGRAM OVERVIEW

Monday 12 September 2022	Tuesday 13 September 2022	Wednesday 14 September 2022
9:00 - 12:00 Registration	8:45 - 9:00, 10:10 - 10:35 Registration	8:45 - 9:00, 10:25 - 10:50 Registration
9:30 - 10:00 OPENING SESSION: Welcome Speeches	9:00 - 10:10 HALL A: 5G Mobile Networks HALL B: Automation	9:00 - 10:25 HALL A: Wireless Communications HALL B: Image and Video Processing 1
10:00 - 10:30 Opening Cocktail	10:10 - 10:35 Coffee Break	10:25 - 10:50 Coffee Break
10:30 - 12:00 PLENARY SESSION: Keynote Talks	10:35 - 12:00 HALL A: Microwave Electronics HALL B: Special Session on Intelligent Transport Systems	10:50 - 12:30 HALL A: Navigation and Education HALL B: Image and Video Processing 2
12:00 - 14:00 Lunch Break	12:00 - 13:15 Lunch Break	12:30 - 14:00 Lunch Break
14:00 - 17:00 5G in Maritime Transport, Tourism, and Harbors <i>* In Croatian</i>	13:30 - 19:30 EXCURSION <i>Meeting point: Hotel "Funimation" main entrance</i>	14:00 - 15:40 HALL A: Antennas and Space Technologies HALL B: Computer Vision
21:00 ELMAR-2022 SYMPOSIUM GALA DINNER		15:45 - 16:00 CLOSING SESSION

Monday, 12 September 2022

9:00 - 12:00 **Registration**

PLENARY HALL

Monday, 12 September 2022

9:30 - 10:00 **OPENING SESSION: Welcome Speeches**

Session Chairs: Branka Zovko-Cihlar, Mario Muštra

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

10:30 - 12:00 **PLENARY SESSION: Keynote Talks**

Session Chairs: Branka Zovko-Cihlar, Mario Muštra

Prof. Galia Marinova; BULGARIA
Hardware Solutions for Cybersecurity

Prof. Radoslav Vargic; SLOVAKIA
Time-frequency analysis and wavelets

12:00 - 14:00 **Lunch Break**

14:00 - 17:00 **5G in Maritime Transport, Tourism, and Harbors**
** Session will be held in Croatian language*

21:00 **ELMAR-2022 SYMPOSIUM GALA DINNER**
Location: Hotel "Donat"

Tuesday, 13 September 2022

8:45 - 9:00, 10:10 - 10:35

Registration

HALL A

Tuesday, 13 September 2022

9:00 - 10:10

5G Mobile Networks

Session Chairs: Ana Katalinić Mucalo, Krešimir Malarić

Nasim Ferdosian, Sara Berri, Arsenia Chorti; FRANCE

5G New Radio Resource Allocation Optimization for Heterogeneous Services

Dragana Krstic, Suad Suljovic, Nenad Petrovic, Zoran Popovic, Sinisa Minic; SERBIA

Influence of Rayleigh Fading and Nakagami-m Cochannel Interference on Multi-branch SC Receiver Capacity Performance

Antonio Milde, Sonja Zentner Pilinsky; CROATIA

Comparison of 4G and 5G NR NSA QoE measurements in Croatian cities

Rene Mahalec, Krešimir Malarić; CROATIA

Assessment of Microwave Radiation Using Thermal Cameras

10:10 - 10:35

Coffee Break

10:35 - 12:00 **Microwave Electronics**

Session Chairs: **Davor Bonefačić, Tomislav Kos**

Awei Zhang, Jinping Xu, Chenkai He, Chunmin Wang and Qiukai Ju; CHINA

An E Band Wideband Superheterodyne Receiver Front-End Using Large-Dynamic-Range Automatic-Gain-Control Loop

Yuwei Zhang, Le Ren, Peiwen Yu, Jinpin Xu; CHINA

Design of an E-band Predistortion Linearizer Based on Reflective Schottky Diodes

Stanislav Vaněk, Karel Kugler, Přemysl Janů; CZECH REPUBLIC

Signal Generator Controlled by Microcontroller

Davor Bonefačić; CROATIA

Performance of Graphite-Filled Conductive Adhesive in Radio and Microwave Frequency Bands

Amina Tanković, Alen Begović, Nermin Goran; BOSNIA AND HERZEGOVINA

On using LAN cables in FTTB/VDSL environment

12:00 - 13:15 **Lunch Break**

13:30 - 19:30 **EXCURSION**

Meeting Point: Hotel "Funimation", main entrance

9:00 - 10:10

Automation

Session Chairs: Edouard Ivanjko, Mario Muštra

Andrei Gaita, A. Buzo, E. David, H. Cucu, G. Pelz; ROMANIA

A Machine Learning Based Wafer Test Ranking for Root Cause Analysis

Andrei Gaita, E. David, A. Buzo, H. Cucu, G. Pelz; ROMANIA

Waveform Clustering Based on Dynamic Time Warping Used in Analog IC Verification

Juraj Londák, Martin Medvecký, Radoslav Vargic; SLOVAKIA

Data Communication in Microgrid

Mansi Bhatnagar, Gregor Rozinaj, Punit Kumar Yadav; SLOVAKIA, INDIA

Web Intrusion Classification System using Machine Learning Approaches

10:10 - 10:35

Coffee Break

10:35 - 12:00 **Special Session on Intelligent Transport Systems**

Session Chairs: Mario Muštra, Edouard Ivanjko

Valentin Radičević, Mario Vranješ, Dragan Samardžija, Jelena Kovačević; CROATIA, SERBIA

Moving Objects Tracking using Motion Vectors with Implementation on a Real ADAS Platform

Ján Nemčík, Peter Kanuch, Ivan Kotuliak; SLOVAKIA

Content Distribution in Private Networks

Krešimir Kušić, René Schumann, Edouard Ivanjko; CROATIA, SWITZERLAND

Building a Motorway Digital Twin in SUMO: Real-Time Simulation of Continuous Data Stream from Traffic Counters

Berthold Panzner, Taylan Sahin, Prajwal Keshavamurthy; GERMANY

Coexistence of 5G Sidelink Communication and 5G Sidelink Positioning

12:00 - 13:15 **Lunch Break**

13:30 - 19:30 **EXCURSION**

Meeting Point: Hotel "Funimation", main entrance

Wednesday, 14 September 2022

8:45 - 9:00, 10:25 - 10:50

Registration

HALL A

Wednesday, 14 September 2022

9:00 - 10:25

Wireless Communications

Session Chairs: Mario Vranješ, Josip Vuković

Le Hao, Agnes Fastenbauer, Stefan Schwarz, Markus Rupp; AUSTRIA

Towards System Level Simulation of Reconfigurable Intelligent Surfaces

Gianmarco Baldini; ITALY

Radio Frequency Fingerprinting based on Circulant Singular Spectrum Analysis

Gianmarco Baldini, Fausto Bonavitacola; ITALY

Blind Channel Identification with Fractional Fourier Transform and Machine Learning

Ndricim Ferko, Bilel Neji, Zaher Al Barakeh, Raymond Ghandour, Taha Beyrouthy; KUWAIT

Balloon based low altitude communication relay utilizing LoRa

10:25 - 10:50

Coffee Break

10:50 - 12:30 **Navigation and Education**

Session Chairs: **Lidija Mandić, Josip Vuković**

Guoxian Huang, Chengdong Xu, Xiaowei Lan, Jitao Wang; CHINA

Bayesian Fault-Tolerant Estimate and Robust Protection Level from Integrity Perspective

Dominik Šalgovič, Marek Galinski, Tomáš Milesich, Ján Danko; SLOVAKIA

Analysis of Telemetry Data from a Tram Vehicle

Renato Ivče, Astrid Zekić, Đani Mohović, Antonio Blažina; CROATIA

Significance of Early Warning System in the Water Ballast Management

Lukáš Anda, Richard Roštecký, Marek Galinski; SLOVAKIA

Identification of malicious behaviour in content delivery network environment

Ella Murseli, Lidija Mandić, Jesenka Pibernik, Ida Srđić; CROATIA

AR application for education

Peter Trúchly, Pavol Podhradský, Tomáš Zeman; SLOVAKIA

Advanced Online Learning Digital Content for Lecturing and Learning

12:30 - 14:00 **Lunch Break**

14:00 - 15:40 **Antennas and Space Technologies**

Session Chairs: **Davor Bonefačić, Mario Muštra**

Martin Štumpf, Petr Kadlec, Tomáš Doležal; CZECH REPUBLIC

Transient Analysis of a 3-D Narrow-Slot Antenna Using the Cagniard-DeHoop Method of Moments

Petr Kadlec, Martin Štumpf, Tomáš Doležal; CZECH REPUBLIC

Towards Time-Domain Characterization of a Rectangular Groove

Robert Wünsche, Marco Krondorf; GERMANY

Memory Based Compensation of Phased Array Beamforming Antenna Gain Loss in LEO Satellite Systems Using Fourier Series

Anđela Matković, Antonio Šarolić; CROATIA

Shipboard military and marine VHF and UHF communications: open sea communication range in the Adriatic Sea

Peter Trúchly, Matej Laš, Rastislav Bencel, Hana Kuntová; SLOVAKIA

Software-Defined LEO Satellite Networks with Focus on Multipath TCP Data Throughput

15:45 - 16:00 **CLOSING SESSION**
In Hall A

9:00 - 10:25**Image and Video Processing 1****Session Chairs: Sonja Grgić, Jelena Božek****Toni Kubat, Ivana Kovačević, Ivan Aleksi, Tomislav Matić; CROATIA**

Sugar/ethanol level measurement in liquids using analog refractometer and digital image processing

Filip Novoselnik, Hrvoje Leventić, Irena Galić, Danilo Babin; CROATIA, BELGIUM

3D U-Net based method for fast segmentation of whole heart from CT images

David Ivusic, Antun Petrak, Jelena Bozek, Sonja Grgic; CROATIA

Annotated Lung CT Image Database

Jelena Šuljug, Snježana Rimac-Drlje; CROATIA

Fast Content Adaptive Representation Selection in HEVC-Based Video Coding for Streaming Applications

Jaroslav Venjarski, Vivek Dwivedi, Gregor Rozinaj; SLOVAKIA

Automatic Image Stitching for Stereo Spherical Image

10:25 - 10:50**Coffee Break**

10:50 - 12:30 **Image and Video Processing 2**

Session Chairs: **Snježana Rimac-Drlje, Marijan Herceg**

Jakub Suder, Tomasz Marciniak, Kacper Podbucki, Adam Dąbrowski; POLAND

Real-time density maps generation of moving objects using embedded systems

Prakash Dhungana, Marijan Herceg, Ratko Grbić, Vladimir Marinković; CROATIA, SERBIA

Implementation of brightness and color equalization methods to create a smooth panoramic image on a real ADAS platform

Marin Benčević, Marija Habijan, Irena Galić, Danilo Babin; CROATIA, SERBIA

Using the Polar Transform for Efficient Deep Learning-Based Aorta Segmentation in CTA Images

Arpad Kis, Horia Balta, Cosmin Ancuti; ROMANIA

Effective restoration of underwater images to improve local feature matching

Arpad Kis, Codruta O. Ancuti; ROMANIA

Night-time image dehazing using deep hierarchical network trained on day-time hazy images

12:30 - 14:00 **Lunch Break**

14:00 - 15:40 **Computer Vision**

Session Chairs: Irena Galić, Marija Habijan

Neven Pičuljan, Željka Car; CROATIA
Semantic Metadata for Image Files

Ivana Žeger, Nikolina Bilanović, Gordan Šišul, Sonja Grgić; CROATIA
Comparison of Metrics for Colorized Image Quality Evaluation

Ana Puljčan, Domagoj Zoraja, Tomislav Petković; CROATIA
Simulation of Structured Light 3D Scanning using Blender

Šimon Tibenský, Vivek Dwivedi, Gregor Rozinaj; SLOVAKIA
3D Content Viewer Environment for Distant Learning

Krešimir Romić, Irena Galić, Marija Habijan, Hrvoje Leventić; CROATIA
Evaluation Framework for Computer Vision-Based Guidance of the Visually Impaired

15:45 - 16:00 **CLOSING SESSION**
In Hall A