

**26. ТЕЛЕКОМУНИКАЦИОНИ ФОРУМ**  
***26<sup>th</sup> TELECOMMUNICATIONS FORUM***

# **ТЕЛФОР 2018**

## ***TELFOR 2018***



**ПРОГРАМ**  
**PROGRAM**

**Београд, 20. и 21. новембар 2018. године**  
***Belgrade, 20 and 21 November 2018***

**Сава центар**  
***THE SAVA CENTER***

**WEB АПЛИКАЦИЈА И ЛОГИСТИЧКА ПОДРШКА**  
*WEB Application and Logistic*

**ETF Beograd**



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## TIME TABLE

### 26th Telecommunications Forum TELFOR 2018

#### 20th November, Tuesday Morning

**9:00 Start of registration - Registration desk, Sava Center , Main Hall**

**10:30 – 12:00 OPENING CEREMONY - Rooms 1/0 + 1A/0 + 1B/0**

**12:00 – 13:00 Welcome Party - Sava Center Restaurant**

#### 20st November, Tuesday Afternoon

Room Time	3/1	4/1	5/1	6/1	2/0	3/0
14:30-16:45	PRS 1 1.1-1.6	Commercial Presentations 13:00	RC 1 3.1-3.7	SP 1 5.1-5.8	TN 1 2.1-2.6	Prezentacije i projekti
17:00-19:15	MWN 11.1-11.5	SS 5G SS.1-SS.6	RC 2 3.8-3.14	SP 2 5.9-5.16	TN 2 2.7-2.12	

Room Time	1/0	1a/0	16/0		Japan Salon/1	9a/0
14:30-16:45	14h ERICSSON 15h NOKIA 16h TELEKOM 17h Panel 5G 18h TERI	CS 1 4.1-4.6	STA 1 9.1-9.7		NEUREL	
17:00-19:15		CS 2 4.7-4.12	STA 2 9.8-9.15			

#### 21nd November, Wednesday Morning

Room Time	3/1	4/1	5/1	6/1	2/0	3/0
8:30-10:45	AEL 1 7.1-7.6	AEM 1 6.1-6.8	STA 7 9.45-9.51	SP 3 5.17-5.24	TN 3 2.15-2.18	
11:00-13:15	AEL 2 7.7-7.13	AEM 2 6.9-6.17	STA 8 9.52-9.58	SP 4 5.25-5.31	DP Slot 1	

Room Time	1/0	1a/0	16/0		Japan Salon/1	9b/0
8:30-10:45	10h VLATACOM 11h CISCO 12h VIP 13h SBB	CS 3 4.13-4.18	STA 3 9.16-9.22		NEUREL	9h IEEE Seminar Kurt Richter
11:00-13:15		CS 4 4.19-4.25	STA 4 9.23-9.29			

## 21nd November, Wednesday Afternoon

Room Time	3/1	4/1	5/1	6/1	2.0	3/0
14:30-16:45		AEM 3 6.18-6.25	MM 1 8.1-8.8	S 1 12.1-12,6	DP Slot 2	Prezentacije i projekti
17:00-19:15	11.6-11.11	OC 1 10.1-10.6	MM 2 8.9-8.14	S 2 12.7-12.11		

Room Time	1/0	1a/0	16/0		Japan Salon/1	9a/0
14:30-16:45	14 TELEKOM 15h TER1 Eng		STA 5 9.30-9.37		<b>NEUREL</b>	
17:00-19:15			STA 6 9.38-9.44			

*(Please see detailed programs)*

Special section:	Advanced Technologies for 5G	Room 4.1
Section 1	Policy, Regulatory Aspects and Services in Communications	Room 3/1
Section 2	Telecommunications Networks	Room 2/0
Section 3	Radio Communications	Room 5/1
Section 4	Communications Systems	Room 1a/0
Section 5	Signal Processing	Room 6/1
Section 6	Applied Electromagnetics	Room 4/1
Section 7	Applied Electronics	Room 3/1
Section 8	Multimedia	Room 5/1
Section 9	Software Tools and Applications	Room 16/0, 5/1
Section 10	Optical Communication	Room 4/1
Section 11	Mobile and Wireless Networks	Room 3/1
Section 12	Student section	Room 6/1
	Distance presentations	Room 2/0

- Room 1/0 – Special Sections: Leading international and domestic companies presentations
- Room 3/0 – Presentations of companies, institutions and projects
- Sava Center Main Hall - Exhibitions
- Room 9/0 – Public Relation, Meetings
- Room 9/0/left – IEEE Seminar

# **САТНИЦА**

## **Телекомуникациони форум ТЕЛФОР 2018**

### 20. новембар, уторак пре подне

9:00 Почетак регистрације учесника - регистрациони пулт, хол Сава центра

10:30 – 12:00 СВЕЧАНО ОТВАРАЊЕ - Сале 1 + 1а + 16 /0

12:00 – 13:00 Коктел добродошлице, ресторан Сава центра

### 20. новембар, уторак после подне

Сала Време	3/1	4/1	5/1	6/1	2/0	3/0
14:30-16:45	ПРУ 1 1.1-1.6	Комерцијалне презентације 13:00	РК 1 3.1-3.7	ОС 1 5.1-5.8	ТМ 1 2.1-2.6	Презентација и пројекти
17:00-19:15	МВМ 11.1-11.5	SS 5G SS.1-SS.6	РК 2 3.8-3.14	ОС 2 5.9-5.16	ТМ 2 2.7-2.12	

Сала Време	1/0	1а/0	16/0	Јапанск	Јапански салон	9/0/лево
14:30-16:45	14ч ERICSSON 15ч NOKIA 16ч ТЕЛЕКОМ	СПС 1 4.1-4.6	САА 1 9.1-9.7		<b>NEUREL</b>	Workshop
17:00-19:15	17ч ПАНЕЛ 5G 18ч ТЕРИ	СПС 2 4.7-4.12	САА 2 9.8-9.15			

### 21. новембар, среда пре подне

Сала Време	3/1	4/1	5/1	6/1	2/0	3/0
8:30-10:45	ПЕЛ 1 7.1-7.6	ПЕМ 1 6.1-6.8	SAA 7 9.45-9.51	ОС 3 5.17-5.24	ТМ 3 2.13-2.18	
11:00-13:15	ПЕЛ 2 7.7-7.13	ПЕМ 2 6.9-6.17	SAA 8 9.52-9.58	ОС 4 5.25-5.31	ПД Слот 1	

Сала Време	1/0	1а/0	16/0		Јапански салон	9/0/лево
8:30-10:45	10ч VLATACOM 11ч CISCO1	СПС 3 4.13-4.18	САА 3 9.16-9.22		<b>NEUREL</b>	9h IEEE Seminar Kurt Richter
11:00-13:15	12ч VIP 13ч SBB	СПС 4 4.19-4.25	САА 4 9.23-9.29			

## 21. новембар, среда после подне

Сала Време	3/1	4/1	5/1	6/1	2/0	3/0
14:30-16:45		РЕМ 3 6.18-6.25	ММ 1 8.1-8.8	С 1 12.1-12.6	ПД Слот 2	Презентације и пројекти
17:00-19:15		ОТ 1 10.1-10.6	ММ 2 8.9..8.14	С 2 12.7-12.11		

Сала Време	1/0	1a/0	16/0		Japanski Salon	9a/0
14:30-16:45	14ч ТЕЛЕКОМ 15ч ТЕРИ		САА 5 9.30-9.37		<b>NEUREL</b>	
17:00-19:15			САА 6 9.38-9.44			

(Видети програме у наставку)

:

<i>Специјална</i>	<i>Напредне технике за 5Г</i>	<i>Сала 4.1</i>
Секција 1	Политика, регулатива и услуге у телекомуникацијама	Сала 3/1
Секција 2	Телекомуникационе мреже	Сала 2/0
Секција 3	Радио-комуникације	Сала 5/1
Секција 4	Системи преноса сигнала	Сала 1a/0
Секција 5	Обрада сигнала	Сала 6/1
Секција 6	Примењена електромагнетика	Сале 4/1
Секција 7	Примењена електроника	Сала 3/1
Секција 8	Мултимедија	Сала 5/1
Секција 9	Софтверски алати и апликације	Сале 16/0, 5/1
Секција 10	Оптичке телекомуникације	Сала 4/1
Секција 11	Мобилне и бежичне мреже	Сала 3/1
Секција 12	Студентска секција	Сала 6/1
	Презентације на даљину	Сала 2/0

- Сала 1/0 – Посебне секције водећих домаћих и интернационалних компанија и институција
- Сала 3/0 – Презентације компанија, институција и пројеката
- Централни хол Сава центра – Изложбе
- Сала 9/0 – Контакт сала, састанци
- Сала 9/0/лево – IEEE семинар,

# **TELFOR 2018**

## **СВЕЧАНО ОТВАРАЊЕ - Opening Ceremony**

Уторак 20.11.2018. године, 10:30 часова

*Tuesday 20th November, 2018, 10:30 a.m.*

Сава Центар, Сале 1+1А+1В /0 - *The Sava Center, Rooms 1 +1A+1B /0*

## **ПЛЕНАРНА СЕДНИЦА - Plenary Session**

### **Увод – Introduction**

### **Поздравне речи - Welcome Messages**

### **Признања – Recognitions**

### **Излагања по позиву - Invited Presentations**

*Dr Vladica Tintor, RATEL*

### **"ZNAČAJ REGULACIJE ZA RAZVOJ TRŽIŠTA TELEKOMUNIKACIJA"**

### **Завршне речи – Conclusions**

Председник Управног одбора – *Chairman of the Steering Committee*

Проф. др Ђорђе Пауновић – *Prof. Dr George Paunović*

### **Коктел добродошлице – Welcome Reception**

Домаћин – *Host*

Друштво за телекомуникације – *Telecommunications Society*



## **COMPANIES EXHIBITORS AT THE EXHIBITION**

### **ФИРМЕ ИЗЛАГАЧИ НА ИЗЛОЖБИ**

	Firma/Organization	Lokacija/Location
	IEEE Serbia&Montenegro	Registracioni pult
1	CIP NETWORKS	A1
2	IRITEL	A2
3	CAMOZZI SRB DOO Šabac	A3
4	GENEKO – RB Generalekonomik	Prezentacija
6	Normann Engineering d.o.o.	A4
7	KOC Communication Ltd	A5
8	FHCE Telekomunikation kft	C2
9	Akademaska Misao	A6
10	TERI Engineering doo	C3
11	MAKSNET Telekomunikacije	C4

## **COMMERCIAL PRESENTATIONS**

### **КОМЕРЦИЈАЛНЕ ПРЕЗЕНТАЦИЈЕ**

Компанија <i>Company</i>	Дан <i>Day of the week</i>	Датум <i>Date</i>	Време <i>Time</i>	Сала <i>Room</i>
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IRITEL Уторак/Tuesday 20.11. 13:00-13:45 4/1

OTN/DWDM оптичка транспортна платформа *OTP100G IRITEL- нове функционалности*  
OTN / DWDM optical transport platform *OTP100G IRITEL - New functionalities*

GENEKO RB Уторак/Tuesday	20.11.	14:00-14:45	4/1
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“Geneko rešenja kao odgovor na trendove M2M, IoT I Security izazove  
Predavač: Milan Uzelac

Pauze od 15 minuta izmedju predavanja služe za provetravanja I čišćenje prostorija (ako je potrebno).  
Firme koje zakupe dvoranu na dva ili više termina mogu vreme da koriste u kontinuitetu.

**SPECIAL SESSIONS FOR COMPANIES AND INSTITUTIONS**  
**ПОСЕБНЕ СЕКЦИЈЕ КОМПАНИЈА И ИНСТИТУЦИЈА**

**ROOM 1/0 / САЈА 1/0**

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**SPECIAL SESSIONS FOR COMPANIES**  
**ПОСЕБНЕ СЕКЦИЈЕ КОМПАНИЈА**

**November 20, Tuesday afternoon / 20. Новембар, уторак после подне**

**14:00 -14:55 ERICSSON, Belgrade**

*Topic/Тема:* A brief inside into the 5G  
*Presenter/Предавач:* Mr Peter Marshall

**15:00 - 15:55 NOKIA, Belgrade**

*Topic/Тема:* 5G Ultra Reliable Low Latency Communication (URLLC)  
*Presenter/Предавач:* Rastko Blagojević, Nokia

*Topic/Тема:* Fixed Networks: The power of “and”  
*Presenter/Предавач:* Ana Pešović, Nokia

**16:00-16:55 TELEKOM SRBIJA 1**

*Topic/Тема:*

**17:00-17:55 PANEL diskusija: “Jesmo li spremni za 5G ?”**

**Učestvuju:** Filip Banković, Izvršni direktor za tehniku - Telekom Srbija  
Natali Delić, Senior tehnički direktor, Vip mobile i A1 Slovenija  
Dr Vladica Tintor, direktor RATEL-a  
**Moderator:** Prof. dr Aleksandar Nešković, Elektrotehnički fakultet u Beogradu

**18:00-18:55 TERI Engineering and Oracle Communicatins**

*Topic/Тема:* 5G Service based Core Architecture and Evolution of Signaling Routing”  
*Presenters/Предавачи:* Jelena Stojanović, TERI i Bernhard Takacs, OCGBU

**November 21, Wednesday morning / 21. Новембар, среда пре подне**

**10:00-10:55 VLATACOM INSTITUT VISOKIH TEHNOLOGIJA, Beograd**

*Topic/Тема:* Veštačka inteligencija i duboko učenje u digitalnoj obradi signala  
*Prezenter/ Предавач:* Prof. emeritus Srdjan Stanković, dr Branka Stojanović, Nataša Vlahović

### **11:00-11:55 CISCO 1, Ingram Micro doo, Belgrade**

*Topic/Тема: CISCO rešenja u službi GDPR regulative*

*Presenter/Предавач: Igor Urošević*

**Pregled Cisco rešenja i tehnologija koje pomažu kompanijama u borbi protiv Cyber kriminala, a i u isto vreme mogu pomoći Korisnicima u ispunjavanju rigoroznih i bezbedonosno kritičnih zahteva ove EU regulative.**

### **12:00-12:55 VIP Belgrade**

*Topic/Тема: IOT: From buzzword to reality*

*Presenter/Предавач: Natali Delić*

### **13:00-13:55 SBB, Belgrade**

*Topic/Тема: EON – televizija budućnosti*

*Presenteri/Предавачи: Mirko Jovanović*

*November 21. Wednesday afternoon, Новембар 21. , среда после подне*

### **14:00-14:55 TELEKOM Srbija 2**

*Topic/Тема: Lora WAN IoT platform – Sistem zaštite TK kablovske infrastrukture*

*Presenter/Предавач: Vladan Nešić, TELEKOM Srbija*

### **15:00-15:55 TERI Engineering & Actility**

*Topics/Теме: LoRa – Low Power Wide Area Connectivity Service for IoT*

*Presenter/Предавач: Srđan Stanojević, TERI i Norbert Herbert, Actility*

## **ROOM 3/0 / SALA 3/0**

## **TECHNICAL AND INFORMATION PRESENTATIONS**

*November 20, Tuesday afternoon / 20. новембар, уторак после подне*

### **14:00-14:55 Horizon 2020 project Semantic Coordination for intelligent sensors (2CENTs)**

*Topic/Тема: Live presentation of one of the results*

*Presenters/Предавачи: Nenad Milošević, Zorica Nikolić and Milorad Tošić, ELFAK Niš*

Diversity of radio access technologies, such as ZigBee, Bluetooth, LTE and Wi-Fi, together with growing requirements for their simultaneous use, significantly increase complexity of IoT wireless networks. A number of open challenges affect practical deployments, such as simultaneous use of multiple technologies, intelligent coordination of a subset of nodes, coexistence of different technologies using the same spectrum, efficient management of (simultaneously used) heterogeneous radio links, etc. SemantiC Coordination for intelligENT sensors (2CENTs) implements network intelligence on top of the FIESTA-IoT platform by reasoning for the network state estimation based on semantic technologies (ST). ST facilitates reasoning about coordination, application priority, frequency selection and dynamic spectrum access. Major achievements in 2CENTs are design and deployment of 2CENTs ontologies framework, mining module based on correlations with conclusions on network states, and Correlational Interference Analyser (CIA) application. Due to the interference between ZigBee and WiFi network, there is packet loss in ZigBee network, leading to the missing measurements data for some period of time. If two or more sensors are affected by the same interferer, the time instants of the missing data should match. The correlation of the missing/present data events for the selected pair

of sensors is explored and analysed by the CIA application. The presentation will consist of two parts. During the first part, 2CENTs project will be described with the respect of its goals and achieved results. Within the second part of the presentation, there will be a live demonstration of the CIA application operation. It will be shown how to select a pair or a larger group of sensors (shown on the city map), calculate the correlation between the sensors' data and show it graphically, and how to make conclusions based on the calculated correlations.

**15:00-15:55 NAEV (Nacionalna asocijacija električnih vozila) I UIDES (Udruženje inženjera elektrotehnike Srbije)**

*TOPIC/TEMA:* **DIGITAL MOBILITY: "5G R&D and Test Center for autonomous vehicles and drones".**

Više predavača.

*November 21, Wednesday Morning / 21. новембар, среда пре подне*

### **11:00-11:55 КАНЦЕЛАРИЈА ЗА ИНФОРМАЦИОНЕ ТЕХНОЛОГИЈЕ И ЕЛЕКТРОНСКУ УПРАВУ**

*Topic/Тема:* Досадашњи резултати и циљеви даљег развоја електронске управе, као једног од стубова дигитализације у Републици Србији

*Presenter/Предавач:* Михајло Јовановић

*November 21, Wednesday afternoon / 21. новембар, среда после подне*

**14:00-15:15 ETF Beograd, Inovacioni centar, project TR-32028 i Stony Brook University, USA**

**Mesto prezentacije:** Hol Sava centra na prvom spratu, iza sale br.6, neposredno iznad glavnog ulaza u Sava centar.

**Elektrotehnički fakultet Beograd, Inovacioni centar Elektrotehničkog fakulteta u Beogradu, Projekat Ministarstva za prosvetu, nauku i tehnološki razvoj TR-32028 “Napredne tehnike za efikasno korišćenje spektra u bežičnim sistemima”**

*Topic/Тема:* **A SYSTEM FOR DIRECT COHERENT INDOOR LOCALIZATION – FROM THEORY TO PRACTICE**

*Predavači/Предавачи:* Miljko Erić, Nenad Vukmirović, Miloš Janjić, Dejan Petković

*Moderator Prezentacije:* **Petar Đurić**, Stony Brook University, USA

**15:00-15:55 CISCO SYSTEMS 2**

*Topic/Тема:* Napredne metode u nadzoru aplikativnih performansi

*Presenter/Предавач:* Marko Vukadinović

**16:00-16:55 PREZENTACIJA: “Nacionalna mreža za kontinualno i automatizovano praćenje značajnih parametara iz domena zaštite životne sredine”**

**Učesnici:** Elektrotehnički fakultet u Beogradu, Institut “Vinča”, Institut za fiziku u Beogradu, projekat 401-00-698/3/2018-05 finansiran od strane Ministarstva zaštite životne sredine – Zeleni fond,

Rukovodilac projekta: **Prof. Aleksandar Nešković**

**17:00-17:55 Tehnička prezentacija**

*Topic/Тема:* **Praksa projektovanja telekomunikacionih mreža i sistema u objektima**

*Autorka prezentacije :* **Mirjana Jarić – Ćirić, dipl.enž.**, (u prezentaciji ce biti navedeni predavači saradnici koji su obrađivali pojedine teme u okviru realizacije ciklusa predavanja o kojima se govori).

# EXHIBITION / ИЗЛОЖБА

## ПТТ МУЗЕЈ, Београд

### "Glasnička služba u Otomanskoj imperiji"



Карл Гебел: Ташарин и суруџија, дејала, око 1861. године (ПТТ музеј, Београд) За ову слику је позаирао Риста Прендић, да би Гебел шио ауθενичније приказати начин преноса поште у Србији.

#### КЊАЖЕВСКИ ТАТАРИН

За Ристу Прендића је владало мишљење да је бистар, вредан, живав и енергичан. Био је нижег раста и јахао је вешто. Ово је запазио и кнез Милош и одредио је да ће од 22. августа 1835. године Риста бити татарин. Бити татарин кнеза Милоша значило је пре свега бити веран кнезу, бити особа од врхунског поверења, јер посао татарина је био да пренеси важне дипломатске списе за Цариград, Солун, Видин, Букурешт, Травник, итд. Татари су били и део кнежевске покретне канцеларије, јер је кнезу и у путу могла да падне на памет нека важна одлука. У том случају, путовање се прекидало, колона кнежевске свите се заустављала и писар би на лицу места састављао писмо, које би кнежев татарин одмах, у пуном трку однео у одређено место. Риста је држао до свог изгледа, кад је био у служби. Ево описа његове одеће: „Одело Татар-Ристино било је врло богато и живописно. Шалваре дуге до земље, црвене, тамно плаве или маслинасте од fine скерлет

чоше, свиленим гајтаном извезене, а на ногавицама је израђен орнамент налик на полумесец. Опасивао се са два појаса од свиле. Силав је био од финог сахтијана, извезен златом, а за силавом заденут сребрњак (кубура окована сребром) и јагаган. Јелек, црвен или зелен, од fine кадифе са златним пуцима, красио му је груди. На глави велики, огроман, фес, са широком свиленом кићанком. Преко јелека облачио је ћурце са широким рукавима, боје увек као шалваре, и везено свиленим гајтаном или златом, поставља је била од самура, која је око врата и спреда вирила као перваз, да се види како је унутра скупоцено крзно. Ђурак, који је допирао до земље, био је од тамно плаве чоше, постављен лисичином, са златним кићанкама...“ Риста се тако облачио, јер је сматрао да пред турским властима, којима је носио кнежевска писма, он представља Србију.



Варварин. Мензулана на Цариградском грму

**THE SAVA CENTER MAIN HALL / Glavni hol SAVA CENTRA**

## **IEEE SEMINAR**

(recommended for students and young engineers)

### **Body Language in Business**

***Trainer Dr. Kurt Richter***

*Emeritus Professor of Electrical Engineering University of Technology Graz, Austria  
IEEE Life Fellow*

**TELFOR 2018**

**Wednesday, November 21, 2018.**

**9:00 - 13:00h**

**Sava Center, Room 9/0/left**

**(free participation –  
registration recommended to [office@telfor.org](mailto:office@telfor.org))**

***Language: English***

***Time: approx. 4 hours***

***Target Group: Engineering students and young engineers***

***Participants: Optimum 30 participants***

***Facilities: Flipchart, (White or Blackboard), Computer -video projector,  
Internet access (when available)***

# ПРОГРАМ АУТОРСКИХ СЕКЦИЈА

## AUTHOR SECTIONS' PROGRAM

### Special section

#### ADVANCED TECHNOLOGIES FOR 5G COMMUNICATIONS

**5G - Уторак, 20.11.2018. године у 17:00 - сала 4/1**  
5G - Tuesday, 20.11.2018, 17:00 – Hall 4/1

**Председавајући: ЗОРАН СТАМЕНКОВИЋ и MARKUS PETRI**

**Chairpersons: ZORAN STAMENKOVIĆ i MARKUS PETRI**

#### **5G: Evolution or Revolution?**

Markus Petri, Jesús Gutiérrez, Eckhard Grass

IHP, Im Technologiepark 25, 15236 Frankfurt (Oder), Germany, +49 335 5625 445

{petri, teran, grass}@ihp-microelectronics.com

Most of current research and publications dealing with mobile networks address 5G, the fifth generation of mobile networks. But in some cases, 5G has become a buzzword, since nearly every potential technology improvement is said to be one key feature of the next generation of mobile networks. Some operators claim they have already rolled out their 5G network, while others say that a pure throughput increase is just a 4.5G network. Asked about the definition of 5G, anybody will give a different answer.

This talk tries to give an answer to the main question: is 5G a network evolution or a revolution? Based on current research project results from the European 5G Infrastructure Public Private Partnership (5G-PPP), the main requirements and the key architectural features of 5G networks are presented. This includes concepts like small cells, network virtualization, millimeter wave access networks, massive MIMO, Cloud-RAN and software defined networks. Some concepts which are investigated by the 5G-XHaul and 5G-PICTURE projects, are discussed in detail. In addition, an overview of currently researched technologies for networks beyond 5G is provided. This includes line-of-sight MIMO, wireless synchronization with picosecond accuracy and localization with sub-millimeter resolution.

- SS.1. Jacobo Fanjul, Ignacio Santamaria: **Flexible Duplexing for Maximum Downlink Rate in Multi-tier MIMO Networks**– *Invited paper*
- SS.2. Nebojsa Maletic, Jesus Gutierrez-Teran, Eckhard Grass: **Beamforming mmWave MIMO: Impact of Nonideal Hardware and Channel State Information**– *Invited paper*
- SS.3. Andjelija Ilić, Slobodan Savić, Nebojša Vojnović, Milan Ilić: **Orbital Angular Momentum Beam MIMO Arrays**
- SS.4. Oguz Ulgen, Utku Ozmat, Emre Gunaydin: **Hybrid Implementation of Millimeter Wave and Visible Light Communications for 5G Networks**
- SS.5. Karthik Krishne Gowda, Abdul Rehman Javed, Lara Wimmer, Andreas C. Wolf, J. Christoph Scheytt, Rolf Kraemer: **PSSS transmitter for a 100 Gbps data rate communication in THz frequency band**
- SS.6. Simon Bojadjevski, Natasha Anastasova Bojadjevaska, Marija Kalendar, Aristotel Tentov: **Interoperability of emergency and mission critical IoT data services**<sup>1)</sup>

<sup>1)</sup> Paper will be presented in section Remote Presentations – Slot 1

**СЕКЦИЈА 1: ПОЛИТИКА, РЕГУЛАТИВА И УСЛУГЕ У  
ТЕЛЕКОМУНИКАЦИЈАМА (ПРУ)  
TELECOMMUNICATIONS POLICY, REGULATORY ASPECTS AND SERVICES (PRS)**

**ПРУ 1 - Уторак, 20.11.2018. године у 14:30 - сала 3/1  
PRS 1 - Tuesday, 20.11.2018, 14:30 – Hall 3/1**

**Председавајући: ВЛАДО ДЕЛИЋ**

**Chairpersons: VLADO DELIĆ**

- 1.1. Biljana Tanatarec: **European and Croatian Legislation on High-Frequency Electromagnetic Field Measurements for the Purpose of Human Health Protection**
- 1.2. Dijana Ilišević, Nataša Banović – Ćurguz, Đurađ Budimir: **Embracing the 5G Era with appropriate regulation framework**
- 1.3. Željka Vujanić, Ivan Kaštelan, Popov Tapavički Dejan: **Safety Certified Controllers with PL c and PL d Performance Levels – A Survey**
- 1.4. Suada Hadžović: **Bridging The Digital Gender Gap** <sup>1)</sup>
- 1.5. Stefan S. Čelanović, Marko S. Asanović, Nataša M. Gospić: **Primjena bežične „Mesh“ mreže za pristup u zaštićenim gradskim zonama**
- 1.6. Snežana D. Šarboh: **Razvoj patentne strategije Nikole Tesle u periodu između 1885.-1893. Godine**

<sup>1)</sup> Paper will be presented in section Remote Presentations – Slot 1

**СЕКЦИЈА 2: ТЕЛЕКОМУНИКАЦИОНЕ МРЕЖЕ (ТМ)  
TELECOMMUNICATIONS NETWORKS (TN)**

**ТМ 1 - Уторак, 20.11.2018. године у 14:30 - сала 2/0  
TN 1 - Tuesday, 20.11.2018, 14:30 – Hall 2/0**

**Wireless Networks**

**Председавајући: МЛАДЕН КОПРИВИЦА и ГОРАН МАРКОВИЋ**

**Chairperson: MLADEN KOPRIVICA and GORAN MARKOVIĆ**

- 2.1. David Vasicek, Jakub Jalowiczor, Lukas Sevcik, Miroslav Voznak: **IoT smart home concept**
- 2.2. Milan Lukić, Živorad Mihajlović, Ivan Mezei: **Data Flow in Low-Power Wide-Area IoT Applications**
- 2.3. Muhammed Cobanlar, Vahid Khalilpour Akram, Orhan Dagdeviren, Bulent Tavli: **Analysis of the Tradeoff Between Network Lifetime and  $k$ -connectivity in WSNs** <sup>2)</sup>
- 2.4. Costas Chaikalīs, Vasileios Zygouras, Ilias K. Savvas: **Reconfiguration between congestion avoidance and multiplexing techniques for 5G**
- 2.5. Pierfrancesco Raimondo, Abdon Serianni, Nunzia Palmieri, Giuseppe Potrino: **Improving Intelligent Transportation System (ITS) introducing a FOG cooperative strategy**
- 2.6. Darko Špoljar, Kristijan Lenac, Dubravko Žigman, Mislav Marović: **A Mobile Network-Based GNSS Anti-Spoofing**

<sup>2)</sup> Paper will be presented in section Remote Presentations – Slot 1



**TM 2 - Уторак, 20.11.2018. године у 17:00 - сала 2/0**

**TN 2 - Tuesday, 20.11.2018, 17:00 – Hall 2/0**

**Communication Networks - 1**

**Председавајући: ДЕЈАН ДРАЈИЋ и АЛЕКСАНДРА СМИЉАНИЋ**

**Chairperson: DEJAN DRAJIĆ and ALEKSANDRA SMILJANIĆ**

- 2.7. Dmitry A. Zaitsev, Tatiana R. Shmeleva, Anatoly I. Sleptsov: **Reenterable Colored Petri Net Models of Networks, Grids, and Clouds: Case Study for Provider Backbone Bridge– Invited paper**
- 2.8. S. Tomović, I. Radusinović: **Dynamic optimization of load-balancing and reconfiguration overhead in SD-ISP networks**
- 2.9. Hasan Redžović, Zoran Čiča, Aleksandra Smiljanić: **Traffic modelling challenges on 10 Gbit/s links using netmap platform**
- 2.10. Teodora Komazec, Aleksandra Smiljanić, Hasan Redžović, Andreja Radošević: **Implementation of RSVP protocol in Quagga software**
- 2.11. L. Sevcik, L. Behan, J. Frnda, M. Uhrina, J. Bienik, M. Voznak: **Prediction of Subjective Video Quality Based on Objective Assessment**
- 2.12. Jan Rozhon, Erik Gresak, Jakub Jalowiczor: **Using LSTM Cells for SIP Dialogs Mapping and Security Analysis**

**TM 3 - Среда, 21.11.2018. године у 8:30 - сала 2/0**

**TN 3 - Wednesday, 21.11.2018, 8:30 – Hall 2/0**

**Communication Networks - 2**

**Председавајући: МАРИЈА АНТИЋ и НЕНАД КРАЈНОВИЋ**

**Chairperson: MARIJA ANTIĆ and NENAD KRAJNOVIĆ**

- 2.13. Danila A. Shkirdov, Evgeny S. Sagatov, Andrei M. Sukhov, Sergey A. Zuev: **Building a Network Intrusion Model Based on Data from Honeypots**
- 2.14. Evgeny V. Shcherba, George A. Litvinov: **Finding Disjoint Paths in Boolean-valued Networks**
- 2.15. Anja Veselinović, Branislav M. Todorović, Stanislava Marković: **ARINC 615A Data Loader Using Ethernet Interface for Aircrafts**
- 2.16. Afan Ceco, Sasa Mrdovic: **Test bed for network protocols optimization**
- 2.17. Marko Lj. Jovanović, Mladen Koprivica, Nataša Nešković: **Zaštita korporativnih mreža od DDoS napada primenom Arbor tehnologije**
- 2.18. Miladin Sandić, Bogdan Pavković, Dušan Živkov, Branislav M. Todorović: **Uticaj dužine integracionog ciklusa na međusobno usklađivanje časovnika u TTEthernet mrežama**

**СЕКЦИЈА 3: РАДИО-КОМУНИКАЦИЈЕ (РК)  
RADIO COMMUNICATIONS (RC)**

**RK 1 - Уторак, 20.11.2018. године у 14:30 – сала 5/1  
RC 1 - Tuesday, 20.11.2018, 14:30 – Hall 5/1**

**Председавајући: ГОРАН МАРКОВИЋ и SLAVCHE PEJOSKI**

**Chairperson: GORAN MARKOVIĆ and SLAVCHE PEJOSKI**

- 3.1. Volkan Ozduran: **Advanced Successive Interference Cancellation For Non-Orthogonal Multiple Access**
- 3.2. Jovana Mrkić, Enis Kočan: **Hybrid OFDM-IM system for BER performance improvement**
- 3.3. Mert Eygi, Gunes Karabulut Kurt: **Jamming Detection: A multicarrier Approach**
- 3.4. Mahmoud Alizadeh, Peter Händel. Daniel Rönnow: **Basis Function Decomposition Approach in Piece-Wise Modeling for RF Power Amplifiers**
- 3.5. Selena Vukotić, Đorđe Babić: **Primena digitalnih interpolacionih filtara baziranih na polinomima na uobličavanje impulsa u OFDM/OQAM sistemima**
- 3.6. Srđan D. Misailović, Vlada S. Sokolović, Goran B. Marković: **Energetski efikasno multi-hop rutiranje u bežičnim senzorskim mrežama zasnovano na adaptaciji HEED protokola**
- 3.7. Pavle D. Bugarčić, Marija Z. Malnar, Nenad J. Jevtić: **Performance analysis of MANET networks based on AODV protocol in NS-3 simulator**

**PK 2 – Уторак, 20.11.2018.године у 17:00 - сала 5/1  
RC 2 - Tuesday, 20.11.2018, 17:00 – Hall 5/1**

**Председавајући: МИРЈАНА СИМИЋ ПЕЈОВИЋ и МИЉКО ЕРИЋ**

**Chairperson: MIRJANA SIMIĆ PEJOVIĆ and MILJKO ERIĆ**

- 3.8. Alper Akarsu, Tolga Girici: **Failure Aware Deployment of Drone Base Stations**
- 3.9. Mladen Mileusnić, Predrag Petrović, Branislav Pavić, Verica Marinković-Nedelicki, Vladimir Matić, Aleksandar Lebl: **A New Method of GSM Systems Jamming Based on Connection Quality Impairment**
- 3.10. Cetin Kurnaz, Tulay Aygun: **Characterization of Indoor and Outdoor Electric Field Strength Levels at Hospitals<sup>2)</sup>**
- 3.11. André Faye, Joseph Diène Ndaw, Moustapha Sène: **SVM-Based DOA estimation with classification optimization<sup>1)</sup>**
- 3.12. Gabriel Militaru, Dan Popescu, Loretta Ichim: **UAV-to-UAV Communion Options for Civilian Applications**
- 3.13. Vitomir Djaja-Josko: **Presence and fall detection in confined indoor environments using multiple UWB transceivers**
- 3.14. Mikhail E. Belkin, Tatiana Bakhvalova: **The Design Principles of Reconfigurable Versatile Base Station for Upcoming Communication Networks**

<sup>1)</sup> Paper will be presented in section Remote Presentations – Slot 1

<sup>2)</sup> Paper will be presented in section Remote Presentations – Slot 2

## СЕКЦИЈА 4: СИСТЕМИ ПРЕНОСА СИГНАЛА (СПС) COMMUNICATIONS SYSTEMS (CS)

СПС 1 - Уторак, 20.11.2018. године у 14:30 - сала 1а/0  
CS 1 - Tuesday, 20.11.2018, 14:30 – Hall 1a/0

### Communications Systems I

Председавајући: ПРЕДРАГ ИВАНИШ и ВЕСНА БЛАГОЈЕВИЋ

Chairpersons: PREDRAG IVANIŠ and VESNA BLAGOJEVIĆ

- 4.1. Aleksei Kharin, Igor Volkov, Aleksei Ovinnikov, Evgeny Likhobabin, Vladimir Vityazev: **Performance of Self-corrected APP-based Decoding Algorithm for Decoders with Quantized Input**
- 4.2. Natasha Ilievska: **On the Error-Detection Properties of the Error-Detectign Code**
- 4.3. Marcin Niemiec, Miralem Mehic, Miroslav Voznak: **Security verification of artificial neural networks used to error correction in quantum cryptography**
- 4.4. Daniela Mechkaroska, Vesna Dimitrova, Aleksandra Popovska-Mitrovikj: **Analysis of the possibilities for improvement of BlockChain technology**
- 4.5. Ozan Alp Topal, Zekai Liang, Gerd Ascheid, Guido Dartmann, Gunes Karabulut Kurt: **Using of Wavelets for Secret Key Generation: A Measurement Based Study**
- 4.6. Mahdi Kashiha, Paeiz Azmi, Behrad Mahboobi: **A Non-Robust and Robust Combination Method of Beamforming and Orthogonal Space-Time Block Coding for Broadcast MIMO system**

СПС 2 - Уторак, 20.11.2018. године у 17:00 - сала 1а/0  
CS 2 - Tuesday, 20.11.2018, 17:00 – Hall 1a/0

### Communications Systems II

Председавајући: ГОРАН ЂОРЂЕВИЋ и ДЕЈАН МИЛИЋ

Chairpersons: GORAN ĐORĐEVIĆ and DEJAN MILIĆ

- 4.7. Aleksandra Golubović, Dejan Milić: **Performance comparison of selection diversity receiver when different decision algorithms are used**– *Invited paper*
- 4.8. Milica I. Petkovic, Predrag N. Ivaniš, Goran T. Djordjević: **Outage Probability Analysis of Mixed RF-FSO System Influenced by Fisher-Snedecor Fading and Gamma-Gamma Atmospheric Turbulence**
- 4.9. Carmen Voicu, Mădălina Berceanu, Simona Halunga: **Non-transparent relays in a Large scale MIMO systems**
- 4.10. Mohammadreza Babaei, Ümit Aygölü, Lütfiye Durak-Ata: **Performance of Selective Decode-and-Forward SWIPT Network in Nakagami- $m$  Fading Channel**
- 4.11. Onur Baktiroğlu, Mohammadreza Babaei, Ümit Aygölü: **A Spectrum Sharing Protocol for Cognitive Full-Duplex DF Relaying Networks**
- 4.12. Marcin Kolakowski: **Improving BLE based localization accuracy using proximity sensors**<sup>1)</sup>

<sup>1)</sup> Paper will be presented in section Remote Presentations – Slot 1

**СПС 3 - Среда, 21.11.2018. године у 8:30 - сала 1а/0**  
**CS 3 - Wednesday, 21.11.2018, 8:30 – Hall 1a/0**

**Communications Systems III**

**Председавајући: ПЕТАР СПАЛЕВИЋ и НЕНАД МИЛОШЕВИЋ**

**Chairpersons: PETAR SPALEVIĆ and NENAD MILOŠEVIĆ**

- 4.13. Srđan Z. Milosavljević, Dejan N. Milić, Petar Ć. Spalević: **Performance of SC Diversity Receiver in Fading Environments with  $\eta$ - $\mu$  distribution – Invited paper**
- 4.14. Vladimir D. Maksimović, Jelena M. Todorović, Petar Lj. Spalević, Mile B. Petrović, Branimir S. Jakšić: **The impact of successive B frames on video using H.264 and H.265 compression techniques**
- 4.15. Matteo Baire, Andrea Melis, Matteo Bruno Lodi, Chiara Dachena, Alessandro Fanti, Giuseppe Mazzarella: **Study and Design of a Wireless Sensors Network for the Optimization of Bread Manufacturing Process**
- 4.16. Elena Zaitseva, Iryna Piestova, Jan Rabcan, Patrik Rusnak: **Multiple-Valued and Fuzzy Logics Applicaton to Remote Sensing Data Analysis**
- 4.17. Filip Dutina, Dragan Radanović, Bogdan Pavković, Velibor Ilić, Nikola Nikolić: **Izvedba programske podrške za bezbedan prenos podataka putem BraodR-Reach sprege**
- 4.18. Milan Paripović: **Mjere unaprjeđenja pouzdanosti napajanja električnom energijom telekomunikacionog objekta**

**СПС 4 - Среда, 21.11.2018. године у 11:00 - сала 1а/0**  
**CS 4 - Wednesday, 21.11.2018, 11:00 – Hall 1a/0**

**Communications Systems IV**

**Председавајући: ЗОРАН ЧИЧА и ДЕЈАН ДРАЈИЋ**

**Chairpersons: ZORAN ČIČA and DEJAN DRAJIĆ**

- 4.19. Milutin S. Davidović, Igor Tomić, Dejan Drajić, Zoran Čiča: **On the impact of NB-IoT on LTE MBB downlink performance**
- 4.20. Lazar Berbakov, Nikola Tomašević, Marko Batić: **Architecture and implementation of IoT system for energy efficient living**
- 4.21. Mita M. Čokić, Ivan P. Šeškar: **Analysis of TCP Traffic in Smart Grid Using SDN Based QoS**
- 4.22. Ilias K. Savvas, Andrey V. Chernov, Maria A. Butakova, Costas Chaikalas: **Increasing the Quality and Performance of N-Dimensional Point Anomaly Detection in Traffic Using PCA and DBSCAN**
- 4.23. Nadezda Yakusheva, Andrey Proletarsky, Michael Basarab: **Pedestrian-Vehicle Collision Avoidance Strategy for NLOS conditions**
- 4.24. Sergiu Nimară, Andrei Mereu, Mihaela Crișan-Vida, Răzvan Bogdan: **Portable device for remote control of a vehicle**
- 4.25. Alvin Huseinović, Saša Mrdović, Kemal Bicakci, Suleyman Uludag: **A Taxonomy of the Emerging Denial-of-Service Attacks in the Smart Grid and Countermeasures**

**СЕКЦИЈА 5: ОБРАДА СИГНАЛА (ОС)  
SIGNAL PROCESSING (SP)**

**ОС 1 - Уторак, 20.11.2018. године у 14:30 - сала 6/1  
SP 1 - Tuesday, 20.11.2018, 14:30 – Hall 6/1**

**Applications – Image and video processing**

**Председавајући: АНА ГАВРОВСКА и МИЛИЦА ЈАНКОВИЋ**

**Chairpersons: ANA GAVROVSKA and MILICA JANKOVIĆ**

- 5.1. Branka Stojanović, Oge Marques, Aleksandar Nešković: **Machine Learning Based Overlapped Latent Fingerprints Segmentation and Separation**– *Invited paper*
- 5.2. Ivana Shopovska, Ljubomir Jovanov, Wilfried Philips: **RGB-NIR Demosaicing Using Deep Residual U-Net** <sup>2)</sup>
- 5.3. Marko Panić, Dušan Jakovetić, Vladimir Crnojević, Aleksandra Pižurica: **Image inpainting and demosaicing via total variation and Markov random field-based modelling**
- 5.4. Eva Tuba, Slaviša Tomić, Marko Beko, Dejan Živković, Milan Tuba: **Bleeding Detection in Wireless Capsule Endoscopy Images Using Texture and Color Features**
- 5.5. Lena D. Novović, Vladimir S. Ostojić, Đorđe S. Starčević, Vladimir S. Petrović: **Automatic calibration marker detection for radiography images**
- 5.6. Daniele Medda, Enrico Aymerich, Yari Mirko Anoffo: **Analysis of Synthetic Light Field Data Compression Performances**
- 5.7. Enrico Aymerich, Daniele Medda, Yari Mirko Anoffo: **An Analysis of Depth Camera Devices for Engineering Applications**
- 5.8. Alexandru Costache, Dan Popescu, Cosmin Popa, Stefan Mocanu: **Efficient Video Monitoring of Areas of Interest**

<sup>2)</sup> *Paper will be presented in section Remote Presentations – Slot 2*

**ОС 2 - Уторак, 20.11.2018. године у 17:00 - сала 6/1  
SP 2 - Tuesday, 20.11.2018, 17:00 – Hall 6/1**

**Signal processing circuits and systems**

**Председавајући: ПЕТЕР АПОСТОЛОВ и ДРАГОМИР ЕЛ МЕЗЕНИ**

**Chairpersons: PETER APOSTOLOV and DRAGOMIR EL MEZENI**

- 5.9. Dragana U. Živaljević, Saša V. Nikolić: **Design of Recursive Digital Filters for Subband Coding**– *Invited paper*
- 5.10. Stefan Pijetlović, Miloš Subotić, Vladimir Marinković, Nebojša Pjevalica: **FIR filter implementation for high-performance application in a high-end FPGA**
- 5.11. Peter Apostolov, Alexey Stefanov, Ivan Nedialkov: **Efficient Two Dimensional Filter Synthesis**
- 5.12. Negovan Stamenković, Nikola Stojanović, Goran Perinić: **Reductions filter return loss of RF filters trough the use of high-degree approximating function**
- 5.13. Daria Yu. Denisenko, Nikolay N. Prokopenko, Yuriy I. Ivanov, Nikolay V. Butyrlagin: **The Band-Pass ARC-Filter on Two Operational Amplifiers with Downconversion of the Pole and Independent Trimming of the Main Parameters**

- 5.14. Nikolay V. Butyrlagin, Nikolay I. Chernov, Nikolay N. Prokopenko, Vladislav Yugay: **Linear Algebra as a Mathematical Apparatus of Threshold Synthesis of Digital Structures**
- 5.15. Zoran Banjac, Željko Đurović, Branko Kovačević: **Approximate Kalman Filtering Using Robustified Dynamic Stochastic Approximation Method**
- 5.16. Isidora Stanković, Miloš Brajović, Miloš Daković, Ljubiša Stanković: **Complex-Valued Binary Compressive Sensing**

**OC 3 - Среда, 21.11.2018. године у 8:30 – сала 6/1**

SP 3 - Wednesday, 21.11.2018, 8:30 – Hall 6/1

*Communication theory and applications*

**Председавајући: ЗОРАН ПЕРИЋ и ГОРАН МАРКОВИЋ**

**Chairpersons: ZORAN PERIĆ and GORAN MARKOVIĆ**

- 5.17. Branko Brkljač, Željen Trpovski: **On the role of ML estimation and Bregman divergences in sparse representation of covariance and precision matrices**– *Invited paper*
- 5.18. Rostislav I. Sokolov, Renat R. Abdullin: **Development and Research on Data Transmission System Using Spread-Spectrum Signals**
- 5.19. Ljiljana Marijanović, Stefan Schwarz, Markus Rupp: **Pilot Pattern Optimization for Small Data Packet Transmission**
- 5.20. Zoran Perić, Bojan Denić, Vladimir Despotović, Nikola Simić: **Delta Modulation with Embedded G.711 Codec**
- 5.21. Rostislav I. Sokolov, Renat R. Abdullin: **Use of Bispectral Analysis for Binary Signal Detection and Restoration**
- 5.22. Slaviša Tomić, Marko Beko, Milan Tuba, Nebojša Bačanin: **Case Study of Target Localization Based on Hybrid and Traditional Ranging via RSS and TOA**
- 5.23. Housseyn E. Sedra, Dimitrije M. Bujaković, Milenko S. Andrić, Slobodan M. Simić, Bojan Č. Milanović: **Ground Surveillance Radar Targets Classification Using Wald Sequential Test**
- 5.24. Venceslav Kafedziski, Sinisha Pecov, Dimitar Tanevski: **Detection and Classification of Land Mines from Ground Penetrating Radar Data Using Faster R-CNN**

**OC 4 - Среда, 21.11.2018. године у 11:00 – сала 6/1**

SP 4 - Wednesday, 21.11.2018, 11:00 – Hall 6/1

*Applications – biomedical signals, speech and audio signals*

**Председавајући: НИКША ЈАКОВЉЕВИЋ и ДРАГАНА ШУМАРАЦ ПАВЛОВИЋ**

**Chairpersons: NIKŠA JAKOVLJEVIĆ and DRAGANA ŠUMARAC PAVLOVIĆ**

- 5.25. Tamara Škorić: **Automatic determination of cross-approximate entropy parameters for cardiovascular time series**– *Invited paper*
- 5.26. Anton Yu. Dolganov, Vladimir S. Kublanov: **Remote decision support system for diagnosis of the arterial hypertension**
- 5.27. Djordje Babić: **ECG Signal Processing in MatDeck**
- 5.28. Nikša M. Jakovljević, Tijana V. Delić, Simona V. Etinski, Dragiša M. Mišković, Tatjana G. Lončar-Turukalo: **A Multi-Target Speaker Detection and Identification System Based on Combination of PLDA and DNN**
- 5.29. Pavol Partila, Jakub Jalowiczor, Jaromir Tovarek, Miroslav Voznak, Jan Rozhon, Remigiusz Baran: **Multi-Classifer Speech Emotion Recognition System**

- 5.30. Sergio D. Correia, Marko Beko, Luis A. Da Silva Cruz, Slaviša Tomić: **Implementation and Validation of Elephant Herding Optimization Algorithm for Acoustic Localization**
- 5.31. Cristina Elena Hanganu, Oana Chenaru, Loretta Ichim, Dan Popescu: **Efficient Solution for Smart Home Applications**

## **СЕКЦИЈА 6: ПРИМЕЊЕНА ЕЛЕКТРОМАГНЕТИКА (ПЕМ) APPLIED ELECTROMAGNETICS (AEM)**

**ПЕМ 1 - Среда, 21.11.2018. године у 8:30 – сала 4/1**  
**AEM 1 - Wednesday, 21.11.2018, 8:30 – Hall 4/1**

**Председавајући: VASILY KOZHEVNIKOV и НИКОЛА ЂУРИЋ**

**Chairpersons: VASILY KOZHEVNIKOV and NIKOLA ĐURIĆ**

- 6.1. D. Kljajic, N. Djuric: **The adaptive boundary exposure assessment approach for broadband EMF measurements**– *Invited paper*
- 6.2. F. Fanari, G. Muntoni, C. Dachena: **Permittivity Measurements of Simulated Biological Tissues for Hyperthermia Applications**
- 6.3. Vladimir Jevnerov, Vladimir Marichev, Grigoriy Marichev: **Remote monitoring of human stress state**
- 6.4. Vasily Yu. Kozhevnikov, Andrey V. Kozyrev, Natalia S. Semeniuk, Aleksandr O. Kokovin: **Theoretical Simulation of Nanosecond High Pressure Gas Discharge in the Pin-to-Plate Gap**
- 6.5. F. Fanari, C. Dachena: **Microwave Disinfection of Farmlands: non-Linear Heat Transfer Modeling**
- 6.6. Goran Nedić, Nikola Djurić, Dragan Kljajić, Karolina Kasaš-Lažetić, Miodrag Pašćan: **Comparative Analysis of the Exposure Assessment to Communication Equipment of High-power Substation**
- 6.7. Khiem Nguyen Khac, Tan Pham Huu, Hung Luu Quang, Letavin Denis A., Knyazev Nikolay S, Nhung Đinh Thi: **Development of Rektenna for Nutrition of Small-Building Devices**
- 6.8. Ahmad Mohebzadeh-Bahabady, Saeed Olyae: **Design and Simulation of a new Structure of Integrated All-Optical AND Logic Gate based on Linear PC Nano-Resonator**

**ПЕМ 2 - Среда, 21.11.2018. године у 11:00 - сала 4/1**  
**AEM 2 - Wednesday, 21.11.2018, 11:00 – Hall 4/1**

**Председавајући: FABIO FANARI и БРАНКА ЈОКАНОВИЋ**

**Chairpersons: FABIO FANARI and BRANKA JOKANOVIĆ**

- 6.9. Marija Milijic, Branka Jokanovic: **Radiation bandwidth of series-fed slot arrays for 5G and IoT applications**
- 6.10. Slobodan Bjelić, Nenad Marković, Uroš Jakšić, Filip Marković: **Transient processes in the electric circuit where inverter arbitrarily supplies the one-phase R(L) loading**
- 6.11. Denis A. Letavin: **Microstrip 3 dB quadrature directional coupler with a high degree of miniaturization**
- 6.12. Dragana B. Jovanović, Saša S. Ilić, Mirjana T. Perić, Zlata Ž. Cvetković: **An Air Transmission Line above Dielectric Layer**
- 6.13. Nikola Milenković, Slobodan Bjelić, Nenad Marković: **The impact of circuits without starter devices in FL/CFL sources on the quality of electric lighting**

- 6.14. Denis A. Letavin, Victor A. Chechetkin: **Influence of substrate parameters on the characteristics and dimensions of the filter with microstrip spiral resonators**
- 6.15. Ahmet Turgut, Begüm Korunur Engiz: **SAR Evaluation due to Exposure from Base Station Operating at 900 MHz and 1800 MHz** <sup>2)</sup>
- 6.16. Fabio Fanari, Marco Marchiori: **Study and Design of a Microwave-Assisted Bio-reactor**
- 6.17. Yasser M. Madany, Hassan M. Elkamchouchi, Sara I. Abd-Elmonieum: **Design and Analysis of Loaded Square Microstrip Patch Antenna with Shorting Post for Miniaturized Wireless Communication Applications** <sup>2)</sup>

<sup>2)</sup> Paper will be presented in section Remote Presentations – Slot 2

**ПЕМ 3 - Среда, 21.11.2018. године у 14:30 - сала 4/1**

**АЕМ 3 - Wednesday, 21.11.2018, 14:30 – Hall 4/1**

**Председавајући: DENIS A. LETAVIN и БРАНКО КОЛУНЏИЈА**

**Chairpersons: DENIS A. LETAVIN and BRANKO KOLUNDŽIJA**

- 6.18. Aleksandra J. Krneta, Branko M. Kolundžija: **Precise and Efficient Analysis of Axially Symmetric Metallic Structures Using Higher Order Basis Functions**– *Invited paper*
- 6.19. Ivan K. Meshkov, Azat R. Gizatulin, Ilya A. Kuk, Elizaveta P. Grakhova, Guzel I. Abdrakhmanova, Anna V. Voronkova, Irina L. Vinogradova, Valery Kh. Bagmanov, Albert Kh. Sultanov: **The Principle of Constructing Antenna Arrays for Generating OAM Radio Waves Based on Multipole Decomposition of Electromagnetic Field** <sup>2)</sup>
- 6.20. George S. Kliros, Konstantinos I. Maniotis: **A Triple-band Ultra-thin Metamaterial Absorber for Radar Cross-Section Reduction**
- 6.21. Semih Doğu, Mehmet Nuri Akinci: **Assessment of Linear Sampling Method and Factorization Method for Through the Wall Imaging**
- 6.22. Slobodan V. Savić, Milan M. Ilić, Antonije R. Djordjević: **Influence of Wire-Based Impedance-Matching on Helical Antenna Radiation**
- 6.23. Ivana Radnović, Branka Jokanović, Anatolij O. Boryssenko: **Circularly Polarized Patch Antenna Array at 24 GHz for Radar Applications**
- 6.24. Pinku Ranjan, Mihir Patil, Amit Bage, Milka Potrebić, Snežana Stefanovski Pajović, Sandeep Kumar P: **Design and Analysis of Dual-Band Dual-Polarized Printed Antenna for Wireless Applicatons**
- 6.25. Hung Luu Quang, Denis A. Letavin, Nikolay S. Knyazev, Khiem Nguyen Khac: **The study of filter design for a circular waveguide**

<sup>2)</sup> Paper will be presented in section Remote Presentations – Slot 2

**СЕКЦИЈА 7: ПРИМЕЊЕНА ЕЛЕКТРОНИКА (ПЕЛ)  
APPLIED ELECTRONICS (AEL)**

**ПЕЛ 1 - Среда, 21.11.2018. године у 8:30 - сала 3/1**

**AEL 1 - Wednesday, 21.11.2018, 8:30 – Hall 3/1**

***Elektronska kola/Electronic circuits***

**Председавајући: ЗЛАТКО БУНДАЛО и ДУШАН ГРУЈИЋ**

**Chairperson: ZLATKO BUNDALO and DUŠAN GRUJIĆ**



- 7.1. Vasily Yu. Kozhevnikov, Andrey A. Zherlitsyn, Evgeniy V. Kumpyak, Aleksandr O. Kokovin, Adrey V. Kozyrev, Vladislav S. Igumnov: **Numerical Simulation of the High-Voltage Switch Operating in a Self-Breakdown Mode**
- 7.2. Sergei A. Zuev, Vladimir V. Starostenko, Evgeniy P. Taran, Sergei V. Shcherbakov, Sergei P. Arsenichev, Evgeniy V. Grigoriev, Ibraim Sh. Fitaev: **Microwave range diffraction properties of structures with nanometer conductive films on amorphous dielectric substrates** <sup>2)</sup>
- 7.3. Denis A. Letavin: **Compact four-ports coupler**
- 7.4. Nikolay V. Butyrlagin, Nikolay N. Prokopenko, Eugene M. Savchenko, Alexey S. Budyakov: **Design features of high-speed CMOS differential difference operational amplifiers at low static current consumption**
- 7.5. Petr S. Budyakov: **Current logic based serial to parallel converter**
- 7.6. Bojan Rakita, Zlatko Bundalo, Dušanka Bundalo, Mirko Šajić: **Context-aware smartphone applications based on generic context supervision services**

<sup>2)</sup> Paper will be presented in section Remote Presentations – Slot 2

**ПЕЛ 2 - Среда, 21.11.2018. године у 11:00 - сала 3/1**  
**AEL 2 - Wednesday, 21.11.2018, 11:00 – Hall 3/1**

**Elektronski sistemi i senzori/Electronic Systems and Sensors**

**Председавајући: НЕНАД ЈЕВТИЋ и ВЛАДИМИР РАЈОВИЋ**

**Chairpersons: NENAD JEVTIĆ and VLADIMIR RAJOVIĆ**

- 7.7. Uglješa Jovanović, Igor Jovanović, Dragan Mančić: **Overview of Temperature Sensors for Temperature Measurement of PV Modules– Invited paper**
- 7.8. Marian Gilewski: **Optical Curtain Transceiver**
- 7.9. Strahinja M. Stančić, Vladimir M. Rajović, Irena Z. Slijepčević: **Performance of FPGA Implementation of the Orthogonal Two-Channel Filter Bank for Perfect Reconstruction**
- 7.10. Marian-Emanuel Ionascu, Iasmina Gruicin, Marius Marcu: **Towards Wearable Air Quality Monitoring Systems – Initial Assessments on Newly Developed Sensors**
- 7.11. Jelena Kocić, Nenad Jovičić, Vujo Drndarević: **Sensors and Sensor Fusion in Autonomous Vehicles**
- 7.12. Marija P. Bežulj, Nenad S. Jovičić: **Genetic Algorithm-Based Solver for Jigsaw Puzzles – Analysis and Improvement**
- 7.13. Martin Gregurić, Sadko Mandžuka: **The use of Cooperative approach in Intelligent Speed Adaptation**

**СЕКЦИЈА 8: МУЛТИМЕДИЈА (ММ)**  
**MULTIMEDIA (MM)**

**ММ 1 - Среда, 21.11.2018. године у 14:30 - сала 5/1**  
**ММ 1 - Wednesday, 21.11.2018, 14:30 – Hall 5/1**

**Video signali, kodovanje, kompresija i prenos**

**Председавајући: АНА ГАВРОВСКА и АЛЕКСАНДАР СУГАРИС**

**Chairpersons: ANA GAVROVSKA and ALEKSANDAR SUGARIS**

- 8.1. Ilija Popadić: **HDR-like imaging– Invited paper**

- 8.2. Yari Mirko Anoffo, Enrico Aymerich, Daniele Medda: **Virtual reality experience for interior design engineering applications**
- 8.3. Roberto Corda: **Digital Holography Data Compression**
- 8.4. Zoran M. Miličević, Zoran S. Bojković: **Analysis of High Efficiency Video Coding (HEVC) test model HM-16.18 for P frame processing**
- 8.5. Nikola M. Tošić, Andreja Samčović, Nikola Lekić, Branislav M. Todorović, Slađana Janković, Snežana Mladenović: **Analiza interferencije u HF opsegu uzrokovane LED reflektorom korišćenjem slike spektrograma**
- 8.6. Roland Szabo: **The Creation Process of an Individual Grade Sender via E-Mail for Students Running on the Server of Sun Trackers**
- 8.7. Roland Szabo: **Search Engine Creation for a Web Platform Where the Data of Sun Follower Robots are Stored**
- 8.8. Filip Berečić, Mario Vranješ, Dejan Stefanović, Zvonimir Kaprocki: **Design and implementation of live video analysis information logging module**

**MM 2 - Среда, 21.11.2018. године у 17:00 - сала 5/1**  
**MM 2 - Wednesday, 21.11.2018, 17:00 – Hall 5/1**

**Audio**

**Председавајући: ДРАГАНА ШУМАРАЦ ПАВЛОВИЋ и МИОМИР МИЈИЋ**

**Chairpersons: DRAGANA ŠUMARAC PAVLOVIĆ and MIOMIR MIJIĆ**

- 8.9. Miloš Bjelić: **Analiza ugaone raspodele incidentne energije spoljašnje buke na fasadama zgrada u urbanim uslovima pomoću mikrofonskog niza**– *Invited paper*
- 8.10. Jelena Tomić, Nebojša Bogojević, Dragana Šumarac Pavlović: **Application of soft computing techniques in prediction of road traffic noise levels**– *Invited paper*
- 8.11. Filip Pantelić: **Primena tehnika snimanja u veoma bliskom polju za karakterizaciju muzičkih instrumenata i materijala za njihovu izradu**– *Invited paper*
- 8.12. Aleksandar Živanović, Siniša Suzić, Ivana Sokolovac, Vlado Delić: **Analiza grešaka u govornoj audiometriji**
- 8.13. Nives Kaprocki, Jelena Kovačević, Milan Bjelica: **Evaluation of immersive audio technologies on in-vehicle infotainment platforms**
- 8.14. Branimir Lazarević, Marija Jovanović, Dušan Živkov, Đorđe Glišić: **Snimanje i zaštita HLS adaptivnog toka podataka na uređajima sa Android Oreo operativnim sistemom**

**СЕКЦИЈА 9: СОФТВЕРСКИ АЛАТИ И АПЛИКАЦИЈЕ (САА)  
 SOFTWARE TOOLS AND APPLICATIONS (STA)**

**САА 1 - Уторак, 20.11.2018. године у 14:30 – сала 16/0**  
**STA 1 - Tuesday, 20.11.2018, 14:30 – Hall 16/0**

***Хардверски системи / Hardware Systems***

**Председавајући: МИРОСЛАВ ПОПОВИЋ и ЗАХАРИЈЕ РАДИВОЈЕВИЋ**

**Chairperson: MIROSLAV POPOVIĆ and ZAHARIJE RADIVOJEVIĆ**

- 9.1. Dragan Mladenović, Milan Knežević, Vladimir Stefanović, Miloš Subotić: **Adding support for the MIPS32 architecture into the Go language compiler**
- 9.2. Aleksandar Marković, Stefan Marković, Aleksandar Rikalo, Petar Jovanović: **Dodavanje podrške za arhitekturu nanoMIPS u emulatoru QEMU**

- 9.3 Violeta Tomašević, Milo Tomašević: **Ubrzanje postupka identifikacije taga kod OSK RFID protokola**
- 9.4 Etki Gür, Zekiye Eda Sataner, Yusuf H. Durkaya, Salih Bayar: **FPGA Implementation of 32-bit RISC-V Processor with Web-Based Assembler-Disassembler**
- 9.5 Milan Vidić, Ivan Lazarević, Roman Pavlović, Ištvan Pap: **Praćenje potrošnje električne energije u pametnim kućama**
- 9.6 Mihailo Stojanović, Miodrag Đukić, Vladimir Radosavljević, Radomir Džakula: **Uvođenje podrške za inkrementalno uvezivanje za arhitekturu MIPS64 u uvezivaču GOLD**
- 9.7 Luka Ercegovići, Miodrag Djukić, Petar Jovanović, Strahinja Petrović: **Podrška za OrcJIT u programskom prevodiocu LLVM za arhitekturu MIPS32**
- 9.8 Marko Popovic, Branislav Kordic, Miroslav Popovic, Ilija Basicovic: **A Solution of Concurrent Queue on PSTM**

**CAA 2 - Уторак, 20.11.2018. године у 17:00 – сала 1b/0**  
 STA 2 - Tuesday, 20.11.2018, 17:00 – Hall 1b/0

**Моделовање процеса и система / Modelling of Processes and Systems**

**Председавајући: БОРИСЛАВ ЂОРЂЕВИЋ и ЖАРКО СТАНИСАВЉЕВИЋ**

**Chairpersons: BORISLAV ĐORĐEVIĆ and ŽARKO STANISAVLJEVIĆ**

- 9.9 Adnan Fehratbegovic: **Power System Modeling Using Common Information Model and Object Oriented Approach**
- 9.10 Anka V. Kabović, Milenko M. Kabović, Slavica V. Boštjančič Rakas, Valentina V. Timčenko: **Models for Short-Term Forecasting of Parameters Used for Calculation of the Overhead Line Ampacity**
- 9.11 Zarko Stanisavljevic, Bartosz Walter, Maja Vukasovic, Andrijana Todosijevec, Maciej Labeledzki, Marcin Wolski: **GÉANT Software Maturity Model**
- 9.12 Stefan M. Kostić, Miloš Đuričić, Mirjana I. Simić, Miroljub V. Kostić: **Data Mining and Modeling Use Case in Banking Industry**
- 9.13 Vasilii Borisov, Alexey Minin, Vera Basko, Alexey Syskov: **FHIR Data Model for Intelligent Multimodal Interface**
- 9.14 Vojdan Kjorveziroski, Sonja Filiposka, Anastas Mishev, Boro Jakimovski: **Designing a PaaS solution for large scale deployment of student projects<sup>1)</sup>**
- 9.15 Adnan Fehratbegović, Naida Fetić: **Business Process Management and Business Intelligence in Enterprise Electric Utility**
- 9.16 Taghi Javdani Gandomani, Zeinab Tavakoli, Mona Najafi Sarpiri, Hamidreza Faraji, Mina Ziaei Nafchi: **Adapting Scrum Process with 7C Knowledge Management Model**

<sup>1)</sup> Paper will be presented in section Remote Presentations – Slot 1

**CAA 3 - Среда, 21.11.2018. године у 8:30 – сала 16/0**  
 STA 3 - Wednesday, 21.11.2018, 8:30 – Hall 16/0

**Алгоритми / Algorithms**

**Председавајући: МАЈА ВУКАСОВИЋ**

**Chairperson: MAJA VUKASOVIĆ**

- 9.17 Dušan Đorić, Saša Crnobrnja, Marija Punt, Mile Davidović: **Realizacija aplikacije za praćenje lica na video snimku u realnom vremenu**

- 9.18 Hristijan Gjorshevski, Kire Trivodaliev, Ivana Nizetic Kosovic, Slobodan Kalajdziski, Biljana Risteska Stojkoska: **Dynamic Programming Approach for Drone Routes Planning**
- 9.19 Martina Boshkovska, Marjan Gusev, Vladimir Zdraveski: **Parallel implementation of an algorithm for Atrial Fibrillation detection using RR intervals and Shannon entropy**
- 9.20 Luka D. Miletić, Žarko M. Milošević, Marko J. Mišić, Jelica Ž. Protić: **Simulaciona analiza algoritama za diseminaciju podataka u blokčejn mreži**
- 9.21 Aleksa Ćorović, Velibor Ilić, Siniša Đurić, Mališa Marijan, Bogdan Pavković: **The Real-Time Detection of Traffic Participant Using YOLO Algorithm**
- 9.22 Selma Kovačević, Amer Voloder, Rijad Devlić, Belma Štukan: **Implementacija softverskog procesora za elektronsko slanje dokumenata kupcima električne energije u JP Elektroprivreda BiH**

**CAA 4 - Среда, 21.11.2018. године у 11:00 – сала 16/0**

STA 4 - Wednesday, 21.11.2018, 11:00 – Hall 16/0

**Мултимедијски системи и визуелизација / Multimedial Systems and Visualization**

**Председавајући: МАРИЈА ПУНТ**

**Chairperson: MARIJA PUNT**

- 9.23 Miloš Ivanković, Ilija Bašičević: **Additional multimedial screen for control of a HbbTV application with the use of Android operating system**
- 9.24 Aleksandar Lazić, Milan Z. Bjelica, Dejan Nađ, Branislav M. Todorović: **Google Assistant integration in TV application for Android OS**
- 9.25 Stanko Ćucuz: **Jedno rešenje Android TV aplikacije Video na zahtev**
- 9.26 Lara Milovanović, Sreten Tanacković, Ilija Bašičević: **Proširenje TV Input Framework komponente sa funkcionalnošću za predlaganje TV sadržaja u Android O okruženju**
- 9.27 Milan Gvero, Ilija Bašičević: **Simulator poslužitelja multimedijalnog sadržaja na osnovu lokalnog skladišta podataka za digitalni TV prijemnik**
- 9.28 Ivica M. Marković: **An Application for Visual Representation of Deterministic Finite Automaton Generated by Jflex**
- 9.29 Uroš Višekruna, Milan Savić: **Jedno rešenje integracije Gugl pomoćnika u Android aplikaciju za kontrolu reprodukcije medija glasovnim komandama**

**CAA 5 – Среда 21.11.2018. године у 14:30 – сала 1b/0**

STA 5 – Wednesday , 21.11.2018, 14:30 – Hall 1b/0

**Биомедицина / Biomedicine**

**Председавајући: МИЛИЦА ЈАНКОВИЋ и ДРАЖЕН ДРАШКОВИЋ**

**Chairpersons: MILICA JANKOVIĆ and DRAŽEN DRAŠKOVIĆ**

- 9.30 Milica M. Badža, Marija M. Novičić, Milica Đurić-Jovičić, Milica M. Janković, Mirjana B. Popović: **System for measuring finger force profiles for dexterity assessment**
- 9.31 Lyudmila V. Babich, Dmitriy A. Svalov, Aleksey L. Smirnov, Mikhail V. Babich: **Neurorehabilitation Control Application: Development Using Ionic Framework**
- 9.32 Lyudmila V. Babich, Dmitriy A. Svalov, Aleksey L. Smirnov, Mikhail V. Babich: **Development of the remote neurorehabilitation system architecture based on SYMPATHOCOR-01 neuro-electrostimulation devices**

- 9.33 Alexey Yu. Zalozhnev, Vasily N. Ginz Jr., Anatoly Eu. Loktionov: **Information Systems and Telecommunications for Municipal and State-Owned Medicaid and Helathcare Enterprises' Personal Data Cyber Security**
- 9.34 Miroslav Stefanović, Sonja Ristić, Darko Stefanović, Marko Bojkić, Đorđe Pržulj: **Possible Applications of Smart Contracts in Land Administration**
- 9.35 Marco Blagoiev, Iasmina Gruicin, Marian-Emanuel Ionascu, Marius Marcu: **A Study on Correlation between Air Pollution and Traffic**
- 9.36 Srđan Popić, Gordana Velikić, Hlavač Jaroslav, Zvezdan Spasić, Marko Vulić: **The Benefits of the Coding Standards Enforcement and it's Influence on the Developers' Coding Behaviour: A Case Study on Two Small Projects**
- 9.37 Youssef Wehbe, Mohamed Al Zaabi, Davor Svetinovic: **Blockchain AI Framework for Healthcare Records Management: Constrained Goal Model** <sup>2)</sup>

<sup>2)</sup> Paper will be presented in section Remote Presentations – Slot 2

**CAA 6 – Среда, 21.11.2018. године у 17:00 – сала 1b/0**  
**STA 6 – Wednesday, 21.11.2018, 17:00 – Hall 1b/0**

**СПОНЗОР СЕСИЈЕ: VLATACOM INSTITUT VISOKIH TEGHNOLOGIJA**

**Машинско учење / Machine Learning**

**Председавајући: МАРКО МИШИЋ**

**Chairperson: MARKO MIŠIĆ**

- 9.38 Yury A. Ushakov, Petr N. Polezhaev, Aleksandr E. Shukhman, Margarita V. Ushakova M.V., Nadezhda: **Split Neural Networks for Mobile Devices** <sup>2)</sup>
- 9.39 Milivoje Popovac, Mirjana Karanovic, Srdjan Sladojevic, Marko Arsenovic, Andras Anderla: **Convolutional Neural Network based SMS Spam Detection**
- 9.40 Andrej Ilievski, Vladimir Zdraveski, Marjan Gusev: **How CUDA powers the Machine Learning revolution**
- 9.41 Miljan Z. Mitrović, Marko J. Mišić: **Klasifikacija muzičkih instrumenata korišćenjem konvolutivnih neuronskih mreža**
- 9.42 Mirjana Karanovic, Milivoje Popovac, Srdjan Sladojevic, Marko Arsenovic, Darko Stefanovic: **Telecommunication Services Churn Prediction – Deep Learning Approach**
- 9.43 Haris Mandal, Miroslav Mirchev, Sasho Gramatikov, Igor Mishkovski: **Multilayer link prediction in online social networks**
- 9.44 Filip Despotovski, Marjan Gusev, Vladimir Zdraveski: **Parallel Implementation of K-Nearest-Neighbors for Face Recognition**

<sup>2)</sup> Paper will be presented in section Remote Presentations – Slot 2

**CAA 7 - Среда, 21.11.2018. године у 8:30 – сала 5/1**  
**STA 7 - Wednesday, 21.11.2018, 8:30 – Hall 5/1**

**Вештачка интелигенција / Artificial Intelligence**

**Председавајући: ПРЕДРАГ ТАДИЋ и НЕНАД КОРОЛИЈА**

**Chairpersons: PREDRAG TADIĆ and NENAD KOROLIJA**

- 9.45 Roland Szabo: **Creating a Robot Brain. Object Recognition and Reading Loud with Voice Controlled Camera**

- 9.46 Nenad Petrovic, Valentina Nejkovic, Nenad Milosevic, Milorad Tosic: **A semantic framework for design-time RIoT device mission coordination**
- 9.47 Slobodan Kalajdziski, Kire Trivodaliev, Biljana Risteska Stojkoska, Ilinka Ivanoska, Blagorodna Ilievska: **Knowledge Discovery in Cyber Attacks Data**
- 9.48 P. Sosnin, E. Sosnina, A. Kulikova: **Ontology-Based Specifications of Concerns in Architectural Modeling of a Software Intensive System**
- 9.49 Valentina Nejkovic, Nenad Petrovic, Nenad Milosevic, Milorad Tosic: **The SCOR ontologies framework for robotics testbed**
- 9.50 Franja Z. Benčić, Sandra D. Nemet, Milana M. Barač, Dragan D. Kukulj: **Trends in AI based Automotive Industry using Patent Analysis**
- 9.51 Dimitri Dojchinovski, Marjan Gusev, Vladimir Zdraveski: **Efficiently running SQL queries on GPU**

**CAA 8 - Среда, 21.11.2018. године у 11:00 – сала 5/1**  
 STA 8 - Wednesday, 21.11.2018, 11:00 – Hall 5/1

**СПОНЗОР СЕСИЈЕ: ROAMING NETWORKS**

*Мрежни системи / Network Systems*

**Председавајући: МИРОСЛАВ ЛУТОВАЦ и ЖИВОЈИН ШУШТРАН**

**Chairpersons: MIROSLAV LUTOVAC and ŽIVOJIN ŠUŠTRAN**

- 9.52 Milan D. Simeunović, Borislav S. Đorđević, Valentina V. Timčenko, Nevena D. Janković: **iSCSI and CIFS network disks for RAID0/RAID1 configurations**
- 9.53 Goran Skondric, Eugen Mudnic: **Node grouping based on pattern of behavior in P2P distributed system**
- 9.54 W. Wojtkowski: **Wireless Monitoring of Semiconductor Switches' Temperatures in a Switching Power Converter**
- 9.55 Wojciech Wojtkowski, Andrzej Zankiewicz: **Data acquisition system with GPRS transmission for monitoring temperature of RF Power Amplifiers**
- 9.56 Riste Stojanov, Sasho Gramatikov, Ognen Popovski, Dimitar Trajanov: **Semantic-driven Secured Data Access in Distributed IoT Systems**
- 9.57 Alexandra Fanca, Adela Puscasiu, Dan-loan Gota, Honoriu Valean: **Evaluating data accuracy of built-in smartphone sensors for mobile applications**
- 9.58 Nenad Petrovic, Valentina Nejkovic, Milorad Tosic: **Dealing with scalability of laboratory sessions in computer science university courses**

**СЕКЦИЈА 10: ОПТИЧКЕ ТЕЛЕКОМУНИКАЦИЈЕ (ОТ)  
 OPTICAL COMMUNICATIONS(OC)**

**ОТ 1 – Среда, 21.11.2018. године у 17:00 – сала 4/1**  
 OT 1 - Wednesday, 21.11.2018, 17:00 – Hall 4/1

**Председавајући: ДЕЈАН М. ГВОЗДИЋ и ЈАСНА В. ЦРЊАНСКИ**

**Chairpersons: DEJAN GVOZDIĆ and JASNA V. CRNJANSKI**

- 10.1. Angelina R. Totović, Jasna V. Crnjanski, Marko M. Krstić, Dejan M. Gvozdić: **Modeling of semiconductor optical amplifiers for optical access networks – Invited paper**

- 10.2. Elnaz Shokati, Nosrat Granpayeh: **High Operative Polarization Converter Using a Single Layer Dual L-shaped Graphene Metasurface Array**
- 10.3. Mehmet Alp Ilgaz, Bostjan Batagelj: **Measurement of the Free Spectral Range and the Side-Modes Suppression Ratio of a 9.3-GHz Single-Loop Opto-Electronic Oscillator by Fiber Path Selector**
- 10.4. Nataša B. T. Pavlović, Adolfo V. T. Cartaxo: **Adaptable QAM Transmitter to Current Elastic Optical Networks Demands**
- 10.5. Jadranka Velinska, Igor Mishkovski, Miroslav Mirchev: **Routing, modulation and spectrum allocation in elastic optical networks**
- 10.6. Jagoda Duran, Lena Mandić, Miloš Džajić: **Nova generacija pasivnih optičkih mreža**

## **СЕКЦИЈА 11: МОБИЛНЕ И БЕЖИЧНЕ МРЕЖЕ (МБМ) MOBILE AND WIRELESS NETWORKS (MWN)**

**МБМ – Уторак, 20.11.2018. године у 17:00 - сала 3/0**  
 MBM – Tuesday, 20.11.2018, 17:00 – Hall 3/0

**Председавајући: МАРИЈА МАЛНАР и НИКОЛА ТОМАШЕВИЋ**

**Chairpersons: MARIJA MALNAR and NIKOLA TOMAŠEVIĆ**

- 11.1. Blanca Ramos Elbal, Fjolla Ademaj, Stefan Schwarz, Markus Rupp: **The Impact of Carrier Frequency at 800 MHz and 3.5 GHz in Urban and Rural Environments Using Large Antenna Arrays**
- 11.2. Panteleimon Balis, Mohammad Rasoul Tanhatalab: **Analytic model for the prediction of cell-edge QoE of streaming video over best-effort mobile radio bearers**<sup>1)</sup>
- 11.3. Teodor B. Iliev, Nikolay T. Nikolaev, Grigor Y. Mihaylov, Elena P. Ivanova, Ivaylo S. Stoyanov, Dimitar I. Radev: **A Critical View of the NFV Dataplane Implementations for 5G Networks**
- 11.4. Bohdan Shevchuk, Mykhailo Geraimchuk, Orest Ivakhiv, Olga Veselska, Anatolij Sachenko: **Optimization of Transferring the Information Packets with Limited Time for Wireless Networks**
- 11.5. Giuseppe Potrino, Nunzia Palmieri, Venturino Antonello, Abdon Serianni: **DRONES Support in Precision Agriculture for Fighting against Parasites**

<sup>1)</sup> *Paper will be presented in section Remote Presentations – Slot 1*

## **СЕКЦИЈА 12: СТУДЕНТСКА СЕКЦИЈА (С) STUDENT PAPERS (S)**

**С1 - Среда, 21.11.2018. године у 14:30 - сала 6/1**  
 S1 - Wednesday, 20.11.2018, 14:30 – Hall 6/1

**Председавајућа: ЈЕЛЕНА ЋЕРТИЋ**

**Chairperson: JELENA ĆERTIĆ**

- 12.1. Aleksandar Kamilovski: **Sampling Mask and Wavelet Transform Experimental Testing for Improved Compressed Sensing of Brain MRI**
- 12.2. Maja P. Pantić, Jelena B. Jakšić: **Mozak-računar interfejs za upravljanje mobilnim robotom pomoću stacionarnih vizuelnih evociranih potencijala**
- 12.3. Aleksandar Antić, Aleksandar Pavlović, Marko Mozetić: **Otkrivanje dijabetesa tipa II metodama mašinskog učenja**

- 12.4. Savo G. Ičagić: **Sistem za vizuelno praćenje objekata u prostoru u realnom vremenu**
- 12.5. Sofija S. Petrović, Mihailo Z. Ristić, Katarina R. Dejanović: **Real-time Recognition of Hand Postures Using MYO Armband**
- 12.6. Nikolina Tomić, Gorana Marković: **Karakterizacija kratkih EKG snimaka u cilju detekcije atrijalne fibrilacije**

**C2 - Среда, 21.11.2018. године у 17:00 - сала 6/1**  
 S2 - Wednesday, 21.11.2018, 17:00 – Hall 6/1

**Председавајућа: МИЛКА ПОТРЕБИЋ**

**Chairperson: MILKA POTREBIĆ**

- 12.7. Ivan Pružljanin: **Malošumni pojačavač sa malom potrošnjom za 5G opseg učestanosti oko 3,6 GHz**
- 12.8. Marija Radulović: **Kritično spregnuti fiberoptički ring rezonator sa splajsom na čipu**
- 12.9. Jelena Božičković, Miloš Živković: **Poređenje metoda mašinskog učenja za klasifikaciju dermatoloških oboljenja**
- 12.10. Radana Gavrić: **Performanse prenosa govora u LTE mrežama**
- 12.11. Ljudmila Petković: **Implementacija tehnika analize teksta u programskom jeziku Python pomoću NLTK-a**

**ПРЕЗЕНТАЦИЈЕ „НА ДАЉИНУ“**  
**REMOTE PRESENTATIONS**

**Среда, 21.11.2018. године у 11:00 - сала 2/0**  
 Wednesday, 21.11.2018, 11:00 – Hall 2/0

**СЛОТ 1 / SLOT 1**

**Председавајући: ДЕЈАН ДРАЈИЋ и МИРОСЛАВ ПЕРИЋ**

**Chairpersons: DEJAN DRAJIĆ i MIROSLAV PERIĆ**

- 2.3. Muhammed Cobanlar, Vahid Khalilpour Akram, Orhan Dagdeviren, Bulent Tavli: **Analysis of the Tradeoff Between Network Lifetime and  $k$ -connectivity in WSNs** (Telecommunications Networks)
- SS.6. Simon Bojadjevski, Natasha Anastasova Bojadjevaska, Marija Kalendar, Aristotel Tentov: **Interoperability of emergency and mission critical IoT data services** (Advanced Technologies for 5G Communications)
- 11.2. Panteleimon Balis, Mohammad Rasoul Tanhatalab: **Analytic model for the prediction of cell-edge QoE of streaming video over best-effort mobile radio bearers** (Mobile and Wireless Networks)
- 3.11. André Faye, Joseph Diène Ndaw, Moustapha Sène: **SVM-Based DOA estimation with classification optimization** (Radio Communications)
- 4.12. Marcin Kolakowski: **Improving BLE based localization accuracy using proximity sensors** (Communications Systems)
- 9.13. Vojdan Kjorveziroski, Sonja Filiposka, Anastas Mishev, Boro Jakimovski: **Designing a PaaS solution for large scale deployment of student projects**
- 1.4. Suada Hadžović: **Bridging The Digital Gender Gap**



**Среда, 21.11.2018. године у 14:30 - сала 2/0**  
**Wednesday, 21.11.2018, 14:30 – Hall 2/0**

**СЛОТ 2 / SLOT 2**

**Председавајући: МЛАДЕН КОПРИВИЦА и МИЉАН ВУЧЕТИЋ**

**Chairpersons: MLADEN KOPRIVICA i MIJAN VUČETIĆ**

- 9.38. Yury A. Ushakov, Petr N. Polezhaev, Aleksandr E. Shukhman, Margarita V. Ushakova M.V., Nadezhda: **Split Neural Networks for Mobile Devices** (Software Tools and Applications)
- 9.37. Youssef Wehbe, Mohamed Al Zaabi, Davor Svetinovic: **Blockchain AI Framework for Healthcare Records Management: Constrained Goal** (Software Tools and Applications)
- 6.15. Ahmet Turgut, Begüm Korunur Engiz: **SAR Evaluation due to Exposure from Base Station Operating at 900 MHz and 1800 MHz** (Applied Electromagnetics)
- 3.10. Cetin Kurnaz, Tulay Aygun: **Characterization of Indoor and Outdoor Electric Field Strength Levels at Hospitals** (Radio Communications)
- 6.17. Yasser M. Madany, Hassan M. Elkamchouchi, Sara I. Abd-Elmonieum: **Design and Analysis of Loaded Square Microstrip Patch Antenna with Shorting Post for Miniaturized Wireless Communication Applications** (Applied Electromagnetics)
- 6.19. Ivan K. Meshkov, Azat R. Gizatulin, Ilya A. Kuk, Elizaveta P. Grakhova, Guzel I. Abdrakhmanova, Anna V. Voronkova, Irina L. Vinogradova, Valery Kh. Bagmanov, Albert Kh. Sultanov: **The Principle of Constructing Antenna Arrays for Generating OAM Radio Waves Based on Multipole Decomposition of Electromagnetic Field** (Applied Electromagnetics)
- 5.2. Ivana Shopovska, Ljubomir Jovanov, Wilfried Philips: **RGB-NIR Demosaicing Using Deep Residual** (Signal Processing)
- 7.2. Sergei A. Zuev, Vladimir V. Starostenko, Evgeniy P. Taran, Sergei V. Shcherbakov, Sergei P. Arsenichev, Evgeniy V. Grigoriev, Ibraim Sh. Fitaev: **Microwave range diffraction properties of structures with nanometer conductive films on amorphous dielectric substrates**

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