Contents

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SWS'2018 Symposium Timetable

Thursday, September 20, 2018	
8:00 AM – 5:00 PM	**Registration** (Main building, Entrance Area, 2-nd floor)
9:00 AM – 9:30 AM	**Opening** (Room **A** - **Main building, room 204**)
9:30 AM – 10:00 AM	**Plenary Session T1** (Room **A**) **Axel Sikora "How LPWA and NB-IoT change the wireless world?"** Chair: Anatoliy Sachenko
10:00 AM – 11:30 AM	**Session TA1** (Room **A**) Wireless Radio Technologies Chair: Taras Maksymyuk
11:30 AM – 11:50 AM	**Coffee Break** (Foyer)
11:50 AM – 1:20 PM	**Session TA2** (Room **A**) Advanced IoT Applications and Services Chair: Orest Ivakhiv
1:20 PM – 2:20 PM	**Lunch** (Cafeteria)
2:20 PM – 3:50 PM	**Session TA3** (Room **A**) Wireless Radio Technologies Chair: Kai-Oliver Detken
3:50 PM – 5:00 PM	**Poster Session TP and Coffee Break** (Foyer) Co-Chairs: Mykhailo Klymash, Mykola Beshley
5:00 PM –7:00 PM	**City Tour**
7:00 PM-10:00 PM	**Conference Dinner**

Friday, September 21, 2018		
8:00 AM – 1:00 PM	**Registration** (Main building, Entrance Area, 2-nd floor)	
9:00 AM – 9:40 AM	**Plenary Session F1** (Room A) **Rainer Leupers "Enabling Future Wireless Platforms with Heterogeneous Multicore SoC´s"** Chair: Axel Sikora	**University Tour for Workshop of German-Ukrainian Students**
9:40 AM – 11:10 AM	**Session FA1** (Room **A**) Wireless Network Architectures Chair: Uwe Grossmann	**Workshop of German-Ukrainian Students** (Room **B** - Building 4, room 124): Managing the Digital Transformation
11:10 AM – 11:30 AM	**Coffee Break** (Foyer)	
11:30 AM – 1:00 PM	**Session FA2** (Room **A**) Advanced IoT Applications and Services Chair: Andrzej Rucinski	**Workshop of German-Ukrainian Students** (Room **B**): Managing the Digital Transformation

1:00 PM – 2:00 PM	**Lunch** (Cafeteria)
2:00 PM-3:00 PM	**Round Table and Closing Ceremony:** (Room **A**) Co-Chairs: Uwe Grossman, Anatoliy Sachenko, Axel Sikora,
3:00 PM - 6:00 PM	**Workshop of German-Ukrainian Students:** (Room **B**) Managing the Digital Transformation

Technical Program

Thursday, September 20, 2018

8:00 AM – 5:00 PM

Registration: Main building, Entrance Area, 2-nd floor.

Room A - Main building, room 204

9:00 AM – 9:30 AM

Opening

9:30 AM – 10:00 AM

Plenary Session T1: Axel Sikora "How LPWA and NB-IoT change the wireless world?"

Chair: Anatoliy Sachenko

10:00 AM – 11:30 AM

Session TA1: Wireless Radio Technologies

Chair: Taras Maksymyuk

Room: **A**

1. Sws18-22. Integrity and Non-repudiation of VoIP Streams with TPM2.0 over Wi-Fi Networks. *Kai-Oliver Detken, Marcel Jahnke, Malte Humann, Bernd Röllgen*. Germany.
2. Sws18-39. Adaptive and Secured Transmission of Monitoring Data in Wireless Networks. *Bohdan Shevchuk, Orest Ivakhiv, Mykhaylo Geraimchuk, Roman Velgan*. Ukraine.
3. Sws18-52. Image Contrast Enhancement for Smart Cameras in Wireless / Mobile Video Applications. *Sergei Yelmanov, Yuriy Romanyshyn*. Poland, Ukraine.
4. Sws18-56. Latency Reduction for Narrowband LTE with Semi-Persistent Scheduling. *Zubair Amjad, Axel Sikora, Benoit Hilt, Jean-Philippe Lauffenburger*. Germany, France.
5. Sws18-66. Method of Information Flows Engineering and Resource Distribution in 4G/5G Heterogeneous Network for M2M Service Provisioning. *Halyna Beshley, Maryan Kyryk, Mykola Beshley and Oleksiy Panchenko*. Ukraine.

11:30 AM – 11:50 AM
Coffee Break: Foyer

11:50 AM – 1:20 PM

Session TA2: Advanced IoT Applications and Services

Chair: Orest Ivakhiv

Room: **A**

Room: **A**

1. Sws18-71. Flexible Fractal Network as a Foundation for Enhanced Wellness. *Thaddeus Kochanski, Tomasz Centala, Alexander Drozd, Raymond Garbos, Jason Jeffords, Vyacheslav Kharchenko, Andrzej Rucinski, Robert Zanghi, Jerzy Zurek.* USA, Poland, Ukraine.
2. Sws18-38. An Effective Floating-Point Reciprocal. *Leonid Moroz, Volodymyr Samotyy, Oleh Horyachyy.* Poland, Ukraine.
3. Sws18-4. Smart Sensor Box for Alivemaps Based on NB-IOT. *Valentin-Adrian Nita, Maria Larossa Noguero, Rokas Slinkse, Charlotte Bruschi, Robert Gundacker, Miguel Minarro Martinz, Hubert Mierzwinski, Maxime Richard, Christoph Braun, Thomas Felberbauer.* Austria, Romania.
4. Sws18-21. A Collaborative System Business Model for Ambient Assisted Living Systems. *Jelena Bleja, Uwe Grossmann, Henrike Langer.* Germany.
5. Sws18-65. Risk Assessment of Critical Energy Infrastructure Considering Physical and Cyber Assets: Methodology and Models. *Oleg Ivanchenko, Vyacheslav Kharchenko, Borys Moroz, Leonid Kabak, Serhii Konovalenko.* Ukraine.

1:20 PM – 2:20 PM
Lunch: Cafeteria

2:20 PM – 3:50 PM

Session TA3: Wireless Radio Technologies

Chair: Kai-Oliver Detken

Room: **A**

1. Sws18-48. Investigating and Optimising the DTLS Handshake over Wireless Links with High Error Rate and Low Data Rate. *Andreas Walz, Muhammad Haris, Axel Sikora.* Germany.
2. Sws18-62. Modeling Digital Radio System Secure Connection with Changing the Operating Frequency. *Mykhaylo Palamar, Volodymyr Kruglov, Andrii Chaikovskyi.* Ukraine.
3. Sws18-9. Hybrid MAC for Low Latency Wireless Communication Enabling Industrial HMI Applications. *Sergiy Melnyk, Khurshid Alam, Abraham Gebru Tesfay, Hans D. Schotten.* Germany.

4. Sws18-64. Model of the Periodic Autocorrelation Function of Code Binary Sequences for Wireless Noise Imune Data Transmission Systems Signals Synthesis. *Andriy Miskiv, Volodymyr-Myron Miskiv, Ivan Prudyus, Roman Yankevych, Sergiy Fabirovskyy*. Ukraine.
5. Sws18-69. Technique of Green Wave Regulation for Special Purpose Vehicles. *Vasyl Yatskiv, Anatoliy Sachenko, Volodymyr Kochan, Oleksandr Osolinsky*. Poland, Ukraine.

3:50 PM – 5:00 PM
Poster Session TP and Coffee Break: Foyer
Co-Chairs: Mykhailo Klymash, Mykola Beshley

1. Sws18-3. The Features of Wireless Technologies Application for Smart House Systems. *Artem Tulenkov, Anzhelika Parkhomenko, Aleksandr Sokolyanskii, Aleksandr Stepanenko, Yaroslav Zalyubovskiy*. Ukraine.
2. Sws18-7. An Improved Binary Whale Optimization Algorithm for Feature Selection of Network Intrusion Detection. *Hui Xu, Yingchun Fu, Ce Fang, Qianqian Cao, Jun Su, Siwei Wei*. China.
3. Sws18-8. Application of Elephant Herd Optimization Algorithm Based on Levy Flight Strategy in Intrusion Detection. *Hui Xu, Qianqian Cao, Ce Fang, Yingchun Fu, Jun Su, Siwei Wei, Pavlo Bykovyy*. China, Ukraine.
4. Sws18-10. The technology of the video stream intensity controlling based on the bit-planes recombination. *Vladimir V. Barannik, Mikolaj P. Karpinski, Vitaly V. Tverdokhleb, Dmitry V. Barannik, Viktoria V. Himenko, Marek Aleksander*. Poland, Ukraine.
5. Sws18-11. The Linguometric Approach for Co-authoring Author's Style Definition. *Vasyl Lytvyn, Victoria Vysotska, Yevhen Burov, Igor Bobyk, Olha Ohirko*. Ukraine.
6. Sws18-16. Image Retrieval Based on Fireworks Algorithm Optimizing Convolutional Neural Network. *Chunzhi Wang, Pan Wu, Lingyu Yan, Fangyu Zhou, Wencheng Cai*. China.
7. Sws18-17. Application of Lightning Search Algorithm in Localization of Wireless Sensor Networks. *Wei Liu, Yongkun Huang, Xinlu Zong, Heng Shi, Zhiwei Ye, Siwei Wei*. China.
8. Sws18-19. A Feature Selection Approach for Network Intrusion Detection Based on Tree-Seed Algorithm and K-Nearest Neighbor. *Feng Chen, Zhiwei Ye, Chunzhi Wang, Lingyu Yan, Ruoxi Wang*. China.
9. Sws18-20. Security Situation Prediction based on Hybrid Rice Optimization Algorithm and Back Propagation Neural Network. *Xu Zhang, Zhiwei Ye, Lingyu Yan, Chunzhi Wang, Ruoxi Wang*. China.
10. Sws18-24. A Node Deployment Optimization Method of WSN Based on Ant-Lion Optimization Algorithm. *Wei Liu, Shuai Yang, Shuang Sun, Siwei Wei*. China.

11. Sws18-26. Intelligent System for Sensor Wireless Network Access: Modeling Methods of Network Construction. *Bohdan Durnyak, Bohdana Havrysh, Oleksandr Tymchenko, Michał Zelyanovsky, Oleksandr O. Tymchenko, Orest Khamula*. Poland, Ukraine.

12. Sws18-27. Vulnerabilities analysis and defense based on MAS method in fast dynamic wireless networks. *Ivan Burlachenko, Iryna Zhuravska, Yevhen Davydenko, Volodymyr Savinov*. Ukraine.

13. Sws18-28. Performance Analysis of TDOA-based Indoor Positioning Systems using Visible LED Lights. *Aqsa Naeem, Naveed Ul Hassan, Muhammad Adeel Pasha, Chau Yuen, Axel Sikora*. Pakistan, Singpore, Germany.

14. Sws18-29. Comparative Analysis of Solutions for Management of Time-Frequency Resource in LTE Downlink. *Oleksandr Lemeshko, Aymen M. K. Al-Dulaimi, Oleksandra Yeremenko, Maryna Yevdokymenko*. Iraq, Ukraine.

15. Sws18-31. Attackers' Wi-Fi Devices Metadata Interception for their Location Identification. *Roman Banakh, Andrian Piskozub*. Ukraine.

16. Sws18-37. Adaptive Data Transmission Protocol for Wireless Sensor Networks Based on Residue Number System Correcting Codes. *Vasyl Yatskiv, Nataliya Yatskiv, Anatoliy Sachenko, Solomiya Yatskiv, Taras Tsavolyk*. Ukraine.

17. Sws18-40. Network Intrusion Detection Based on Hybrid Rice Algorithm Optimized Extreme Learning Machine. *Xiao Zheng, Zhiwei Ye, Jun Su, Hongwei Chen, Ruoxi Wang*. China.

18. Sws18-44. Access Control System Based on Encryption in QR-Code Technology. *Vitalii Susukailo, Yuriy Lakh*. Ukraine.

19. Sws18-45. Measurement of high-frequency electromagnetic fields in CNC machine tools area. *Joanna Michałowska, Arkadiusz Tofil, Jerzy Józwik, Jarosław Pytka, Piotr Budzyński, Ewa Korzeniewska*. Poland.

20. Sws18-46. Application of a Distance-weighted KNN Algorithm Improved by Moth-Flame Optimization in Network Intrusion Detection. *Hui Xu, Ce Fang, Qianqian Cao, Chaochuan Fu, Lingyu Yan, Siwei Wei*. China.

21. Sws18-47. Rapid No-Reference Contrast Assessment for Wireless-based Smart Video Applications. *Sergei Yelmanov, Yuriy Romanyshyn*. Poland, Ukraine.

22. Sws18-49. Investigation of the Effect of the Measuring Probe Orientation on the Wireless Radio Signal Transmission in Measurements on a CNC Machine Tool. *Jerzy Józwik, Arkadiusz Tofil, Joanna Michałowska, Jarosław Pytka, Piotr Budzyński, Ewa Korzeniewska*. Poland.

23. Sws18-54. The Information Service for Delivering Arrival Public Transport Prediction. *Inna Skarga-Bandurova, Marina Derkach, Igor Kotsiuba*. Ukraine.

24. Sws18-58. Operation Analysis of Statistical Information Telecommunication Networks using Neural Network Technology. *Yurii Khlaponin, Dmytro Khlaponin, Igor Trush, Mikołaj Karpiński, Uliana Iatsykovska*. Poland, Ukraine.

25. Sws18-59. Security Systems with Biometry based on Partial View Facial Images Using Geometrical Features. *Piotr Milczarski, Zofia Stawska, Shane Dowdall*. Poland, Ireland.

26. Sws18-60. Autoencoder Neural Networks for Outlier Correction in ECG-Based Biometric Identification. *Mikolaj Karpinski, Volodymyr Khoma, Valerii Dudykevych, Yuriy Khoma, Dmytro Sabodashko*. Poland, Ukraine.

5:00 PM –7:00 PM
City Tour

7:00 PM – 10:00 PM
Conference Dinner

Friday, September 21, 2018

8:00 AM – 1:00 PM
Registration: Main building, Entrance Area, 2-nd floor.

9:00 AM – 9:40 AM
Plenary Session F1: Rainer Leupers "Enabling Future Wireless Platforms with Heterogeneous Multicore SoC´s"
Room: **A**
Chair: Axel Sikora

9:40 AM – 11:10 AM
Session FA1: Wireless Network Architectures
Chair: Uwe Grossmann
Room: **A**
1. Sws18-12. Modified Naive Bayes Algorithm for Network Intrusion Detection based on Artificial Bee Colony Algorithm. *Juan Yang, Zhiwei Ye, Lingyu Yan, Wei Gu, Ruoxi Wang*. China.
2. Sws18-13. Wrapper Feature Selection Based on Lightning Attachment Procedure Optimization and Support Vector Machine for Intrusion Detection. *Shuang Sun, Zhiwei Ye, Lingyu Yan, Jun Su, Ruoxi Wang*. China.
3. Sws18-14. A Network Intrusion Detection Method Based on Hybrid Rice Optimization Algorithm Improved Fuzzy C-Means. *Can Jin, Zhiwei Ye, Chunzhi Wang, Lingyu Yan, Ruoxi Wang*. China.

4. Sws18-18. Research on Network Intrusion Detection Based on Support Vector Machine Optimized with Pigeon-inspired Optimization Algorithm. *Yiheng Sun, Zhiwei Ye, Chunzhi Wang, Lingyu Yan, Ruoxi Wang*. China.
5. Sws18-42. Trilateration Positioning Optimization Algorithm Based on Minimum Generalization Error. *Wei Liu, Yuanyuan Xiong, Xinlu Zong, Wei Siwei*. China.

11:10AM – 11:30 AM
Coffee Break: Foyer

11:30 AM – 1:00 PM
Session FA2: Advanced IoT Applications and Services
Chair: Andrzej Rucinski
        Room: **A**
1. Sws18-34. Application Enablement Providers in the Internet of Things. *Carsten Wolff, Ala Nuseibah*. Germany.
2. Sws18-35. Combined Models for Forecasting the Air Pollution Level in Infocommunication Systems for the Environment State Monitoring. *Alexander Kuchansky, Andrii Biloshchytskyi, Yurii Andrashko, Vladimir Vatskel, Svitlana Biloshchytska, Olena Danchenko, Igor Vatskel*. Ukraine.
3. Sws18-53. Designing the Industrial and Environmental Monitoring System based on the Internet of Things Architecture. *Mykhailo Klymash, Taras Maksymyuk, Stepan Dumych, Oleg Yaremko*. Ukraine.
4. Sws18-67. Adaptation Video Signal to Spectral Distribution of Light Source. *Volodymyr Pyliavskyi, Serhii Siden, Olena Osharovska, Katerina Neumytykh*. Ukraine.
5. Sws18-70. Deep Learning Based Massive MIMO Beamforming for 5G Mobile Network. *Taras Maksymyuk, Juraj Gazda, Oleh Yaremko, Denys Nevinskiy*. Slovakia, Ukraine.

1:00 PM – 2:00 PM
Lunch: Cafeteria

2:00 PM – 3:00 PM
Round Table and Closing Ceremony: Room **A**
Co-Chairs: Uwe Grossman, Anatoliy Sachenko, Axel Sikora

Getting to Lviv

Train

Lviv Railway Station
Address: 1 Dvirtseva sq., Lviv, Ukraine
Website: http://www.uz.gov.ua/en/passengers/timetable/
http://railway.lviv.ua/
You can buy tickets online using the official booking service of Ukrainian
Railways: http://booking.uz.gov.ua/en/

Plane

Danylo Halytskyi International Airport Lviv
Address: 168 Lubinska str., Lviv, Ukraine
Website: http://lwo.aero/en
You can buy tickets online using the booking service https://tickets.ua/en

Bus

Lviv Bus Station
Many regular bus routes in Western Ukraine (both direct or transit) run to Lviv.
Address: 109 Stryiska str., Lviv, Ukraine
Website (bus shedule): http://bus.com.ua/460100/1/time.html
You can buy tickets online using various booking servicehttps://bus.tickets.ua/en

Car

If you travel to Lviv by your own car, it will be best for you to follow E-40
International Highway (from the western border to Lviv it is M-11 Ukrainian
Highway, and from Kyiv it is M-06). Speed limit within towns and cities is 60
km/h. In other areas it is usually 90 km/h, but please follow road signs carefully.

Venue

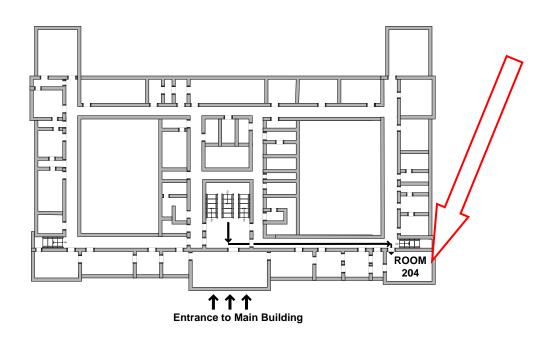**The symposium venue:**

79013 Bandera Street, 12, Lviv, Ukraine, the Main Building of Lviv Polytechnic National University.

Room A - Main building, room 204, 2-nd floor

Entrance to Main Building

ROOM 204

About Lviv

Lviv is is the largest city in western Ukraine and the seventh-largest city in the country overall, with a population of around 730 000. Lviv is one of the main cultural centres of Ukraine and the whole Central and Eastern Europe. The historic city centre is on the UNESCO World Heritage List.

Lviv was founded in 1256 by King Daniel of Galicia in the Ruthenian principality of Halych-Volhynia and named in honour of his son Lev. In 1356 the city was granted with Magdeburg rights which implied that all city issues were to be resolved by a city council elected by the wealthy citizens. The city council seal of the 14th century stated Civitatis Lembvrgensis. This started a period of accelerated development.

Lviv Polytechnic National University

On March 7 1816 , the Tsisar-Royal Real School was opened in Lviv then territory of the Austrian empire. A technical school was established with the help of the newly introduced local industrial tax. In the curricula of the Royall School, the main focus was assigned to the subjects of the natural-mathematical cycle, drawing, drawing and the study of new modern languages.

On November 4 1844 the school was upgraded to the Technical Academy Lemberg. The school had two departments – technical and commercial. Education lasted three years.

November 15, 1877: Inauguration of the new rector – professor of architecture Julian Zachariewicz. On the same day, consecration of newly constructed school's building took place.

Nowadays Lviv Polytechnic National University is the largest scientific university in Lviv with about 35000 students. Since its foundation in 1816, it has been one of the most important centres of science and technological development in Central Europe.

The modern structure of the university includes: 16 educational institutes (as well as the Institute of distance learning and the International Institute of Education, Culture and Relations with the Diaspora); Research Centre, Scientific and technical library, 8 colleges, two gymnasiums, 34 teaching and laboratory buildings.

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