



TECHNICAL UNIVERSITY OF KOŠICE  
Faculty of Aeronautics



EUROPEAN UNION  
European Regional Development Fund  
OP Integrated Infrastructure 2014 – 2020



**NEW TRENDS IN AVIATION DEVELOPMENT 2022**  
**THE XVII INTERNATIONAL SCIENTIFIC**  
**CONFERENCE**

Faculty of Aeronautics

Nový Smokovec, Slovakia



## NTAD – programme

### 23.11.2022 – Nový Smokovec, Hotel Atrium

17:00 – 18:00 Registration

18:00 – 20:00 Welcome Dinner

### 24.11.2022 – Nový Smokovec, Hotel Atrium

7:30 – 8:30 Registration

- 08:30 – 08:40** Opening of the conference
- 08:40 – 9:30** Session 1 - Session Chair – prof. Ing. R. Andoga, PhD.
- 08:40 – 9:10 Invited Talk – New Aviation Legislation – M. Hýsek (Ministry of Transport)
- 9:10 – 9:30 Invited Talk – Do we really need to manage UAS operations (in the airspace of the Slovak Republic)? – Š. Dusza (Air Transport Services)
- 9:30 – 10:00** Coffee Break
- 10:00 – 12:00** Session 2 - Session Chair – Session Chair – M. Eng. M. Košuda, PhD.
- 10:00 – 10:15 Displaying Additive Information in the Pilot's Visual Field Using Augmented Reality Glasses - Socha, Erik Ingeduld, Tomas Malich, Lenka Hanakova, Liana Karapetjan
- 10:15 – 10:30 Evaluation of transport company financial situation - Petr Šuleř, Pavla Gallistlová
- 10:30 – 10:45 Comprehensive Review on Aviation Operator's Total Loads Omar Alharasees, Osama H. Adali, Utku Kale
- 10:45 – 11:00 Inspection of wind power plant turbines by using UAV - Péter Udvardy, Gergő Tóth, Károly Pál, Tamás Jancsó
- 11:00 – 11:15 Synchronization of time bases and its effect on the accuracy of determining the position of flying objects - Peter Dzurovčín, Sebastian Mako, Peter Koščák
- 11:15 – 11:30 Modern Technologies & Human Performance Taxonomy in Air Traffic Management Development. Polish and Georgian Case Studies - Nika Tikanashvili, Antoni Kopyt
- 11:30 – 11:45 The Most Critical Phase of the Flight Identification Based on HRV Measurements of Pilots Workload - Iveta Škvareková, Pavol Pecho, Branislav Kandra
- 11:45 – 12:00 Analysis of Human Factors Analysis and Classification System (HFACS) of UAV Operators - Omar Alharasees, Muftah S.M. Abdalla, Utku Kale
- 12:00 – 14:00** Lunch



## NTAD – programme

**24.11.2022 – Nový Smokovec, Hotel Atrium**

- 14:00 – 15:30**    **Session 3 - Special PhD. Section – prof. Ing. M. Kelemen, PhD.**
- 14:00 – 14:15**    Grant Financing in Transport Sector in Slovakia - Kvetoslav Kmec
- 14:15 – 14:30**    Empirical Pre-survey of Student - Pilots' Opinions on the Evaluation Information System - Martin Kelemen, Jr., Anton Korniienko, Martin Kováč, Róbert Rozenberg
- 14:30 – 14:45**    A Comparative Study: Language Proficiency Requirements on Pilots, Air Traffic Controllers and Aircraft Technicians - Ingrid Sekelová, Peter Korba, Martina Koščáková
- 14:45 – 15:00**    Intelligent airport protection supported by sophisticated security systems - Branislav Lancik
- 15:00 – 15:15**    Possibilities of Introducing new Standard Arrival and Departures Routes at Malacky Airport - Ľubomír Šuťák, Mária Čechová, Martin Kelemen, Anton Korniienko, Matej Antoško, Róbert Rozenberg
- 15:15 – 15:30**    Analysis of Sustainable Aviation Fuels Market - Martina Koščáková, Peter Korba, Peter Koščák, Dávid Pastír, Ingrid Sekelová
- 15:30 – 16:00**    **Coffee Break**
- 16:00 – 17:30**    **Session 4 – Assoc. prof. Ing. P. Kurdel, PhD.**
- 16:00 – 16:15**    The potential of selected Industry 4.0 tools in the aerospace industry - Patrik Šváb, Peter Korba, Dávid Pastír, Daniel Blaško
- 16:15 – 16:30**    Actual costs of equity in Transportation and storage - Jaromír Vrbka, Martina Šebestová
- 16:30 – 16:45**    The Impact of Covid-19 on Marketing Mix and Economics of Airlines - David Melas, Martin Petříček
- 16:45 - 17:00**    Design of Mirror System for Visual Illusion Induction - Patrick Jankech, Stanislav Kusmirek, Vladimír Socha, Lenka Hanakova, Michaela Kalivodova
- 17:00 - 17:15**    Development of road infrastructure in the Slovak Republic - Šimková Zuzana, Bednárová Lucia
- 17:15 – 17:30**    Air Accident Investigation and State Safety Oversight with CAST Analysis - Kateřina Grötschelová, Natalia Guskova, Martin Černotík
- 18:30 Gala Dinner**



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24.11.2022 – Nový Smokovec, Hotel Atrium

**14:00 – 17:30**    **Poster session – prof. Ing. L. Főző, PhD.**

Use of IoT in Air Transport - David Šmotlák, Andrej Novák, Tomasz Lusiak

Selected Aspects of the Aircraft Selection and Evaluation Process for an Airline - Lucia Melníková, Edina Jenčová, Sebastián Makó

Aviation Regulations for Drone Operations in the Slovak Republic and the EU - Branko Mikula, Marek Košuda

Use Of HLFC Technology In Low-Speed Civil Aviation Applications - Pavol Pecho, Matej Sabo, Michal Hrúz, Martin Bugaj

Determining the Break Even Point of the Air Carrier - M. Džunda, P. Koščák, L. Melníková, P. Čekan

Correcting surface errors of the scanned gyroplane 3D model using Siemens NX software - Volodymyr Tymofiiiv, Samer Al-Rabeei, Michal Hovanec, Peter Korba, Branislav Racek.

Laser attacks on aircraft and some experiences from the Czech Republic - Petr Adolf Skřehot, Jakub Marek, Peter Korba

Supply Chain Risks Assessment of selected EUROCONTROL's surveillance products - Ing. Marián Jančík, Ing. Šimon Holoda, PhD., Ing. Lucia Melníková, PhD. and doc. Ing. Branislav Kandra PhD.

Relationship between Air Transport and the Economic Growth - Edina Jenčová, Iveta Vajdová, Peter Korba, Lucia Melníková

Use of Computer Simulation to Optimize UAV Swarm Flying - Pavol Pecho, Patrik Velký, Samuel Kapustík, Andrej Novák

Methodology for Inspecting the Correctness of the Function of Airport Lighting Systems Using a Commercially Available UAS - Michal Černý, Tomáš Tluchoř, Marek Hamza

Analysis of the introduction of artificial intelligence in the control of UAV - Jozef Gúcky, Kristína Kováčiková, Andrej Novák, Martin Bugaj

Development of air transport in two key regions in the Slovak Republic with regard to their character - Alena Novák Sedláčková, Dávid Turčan, Tatiana Remencová

The volume of freight transport in V4 countries relative to GDP - Bednárová Lucia, Šimková Zuzana

Development of road infrastructure in the Slovak Republic - Šimková Zuzana, Bednárová Lucia

Unmanned aircraft (drones) as a security threat to the exercise of judicial power in the Slovak Republic - Maroš Divok, Milan Husťák

Optimization of Legislative Requirements for Heavy Equipment of Airport Rescue and Fire Fighting Brigade - Frantisek Trefny, Ladislav Capousek, Iveta Kamenikova, Milan Kamenik

**18:30 Gala Dinner**



## NTAD – programme

25.11.2022 – Nový Smokovec, Hotel Atrium

- 8:30 – 9:30**     **MOVIR session - Session 5 - Chair — Assoc. prof. Ing. Pavol Lipovský, PhD.**
- 8:30 – 8:45**     Application Software of Modular System for Magnetic Characteristics Measurement - Patrik Kašper, Pavol Lipovský, Miroslav Šmelko
- 8:45 – 9:00**     Movement Analysis of the Aircraft Optoelectronic Tracking System in Lateral Plane - Šimon Karaffa, Róbert Bréda, Miriam Hlinková
- 9:00 – 9:15**     Drones for Monitoring of Aeras and Objects - Ľuboš Guláš, Matej Talian, Alena Moravčíková, Eduard Dolný
- 9:15 – 9:30**     Buffer zones for forced engine-out landing in ultra-light aircraft operation - Dávid Pastír, Patrik Šváb, Michaela Tirpáková
- 9:30 – 10:00**     **Coffee Break**
- 10:00 – 12:00**     **Session 6 - Session Chair – Assoc. prof. M. Antoško, PhD.**
- 10:00 – 10:15**     Risks determination during the life-cycle of conventional and sustainable aviation fuels - the environmental aspect - Anna Yakovlieva; Natália Gecejová; Marek Češkovič; Pavol Kurdel; Sergii Boichenko
- 10:15 – 10:30**     Air Policing in V-4 countries - Robert Klír, Rastislav Mahdal
- 10:30 – 10:45**     Aircraft Gas Turbine Engine Vibration Diagnostic Method - Stanislav Fábry; Marek Češkovič; Natália Gecejová
- 10:45 – 11:00**     Virtual Tower And Its Applications For Small Airports - Beáta Ovčáčková, Lucia Melníková, Sebastián Čikovský
- 11:00 – 11:15**     Generative Design in the Construction of the Modern Sensor Attachments - Jaroslav Kessler, Karol Semrád



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**25.11.2022 – Nový Smokovec, Hotel Atrium**

**11:15 – 11:30** The Concept of Financing the Preparatory Phase of an Airline – Airline Maker - Milan Šulgan, Lucia Melníková

**11:30 – 11:45** Analysis of Codes of Ethics in the Transport and Logistics Industry in the Czech Republic - Zdeněk Čaha, Renata Skýpalová, Michal Ruschak

**11:45 – 12:00** Relation between wing aspect ratio and induced drag  
Wieszata - Robert, Kołodziej Piotr, Mendala Jacek, Kozuba Jarosław

**12:00** Closing ceremony and lunch

## THE END OF THE CONFERENCE

Organiser



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