TECHNICAL UNIVERSITY OF KOŠICE

Faculty of Aeronautics



NEW TRENDS IN AVIATION DEVELOPMENT 2026

21st INTERNATIONAL SCIENTIFIC CONFERENCE

High Tatras - Starý Smokovec, Slovakia

TECHNICAL UNIVERSITY OF KOŠICE
Faculty of Aeronautics

NTAD

NTAD 2026

NEW TRENDS IN AVIATION DEVELOPMENT

21st INTERNATIONAL SCIENTIFIC CONFERENCE

FINAL PROGRAMME

DAY 1 – 26.11.2026

08:30 – 09:00	Registration
09:00 – 09:10	Opening of the Conference
09:10 – 10:10	Plenary Session 1[A] (Invited Talks)
10:10 – 10:30	Coffee Break & Welcome Group Photo
10:30 – 12:00	Plenary Sessions 2[A], 2[B]
12:00 – 13:15	Lunch Break
13:15 – 14:45	Plenary Session 3[A] & Poster Session[C]
15:15 – 17:15	
18:30 – 19:00	Gala Evening
19:00 – 20:00	Gala Dinner
20:00 – 22:00	Gala Ceremony

DAY 2 – 27.11.2026

08:30 – 09:00	Registration
09:00 – 10:30	Plenary Sessions 5[A], 5[B]
10:30 – 10:45	Coffee Break
10:45 – 12:15	Plenary Sessions 6[A], 6[B]
12:15 – 13:00	Lunch Break
13:00 – 14:30	Plenary Sessions 7[A], 7[B]

Conference sessions marked with A will be held in Hoepfner Hall
Conference sessions marked with B will be held in Fridrich August Lounge
Conference sessions marked with C will be held in Billiard Table Passage

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NTAD Programme – Day 1

26.11.2026 – Thursday

08:30 – 09:00 **Registration**

09:00 – 09:10 **Opening of the Conference** – Dean of the Faculty of Aeronautics, Technical University of Košice – *prof. Ing. P. Korba, PhD.*

09:10 – 10:10 **Plenary Session 1[A]** – Session Chair – *prof. Ing. R. Andoga, PhD.*

09:10 – 09:30 Modernization of the Technical Systems of LPS SR, š. p. – *A. Jelenčiak*

09:30 – 09:50 Cirrus Aircraft – safety and technologies – *D. Chrobák*

09:50 – 10:10 Development of the L-39NG – *M. Komjáty*

10:10 – 10:30 **Coffee Break & Welcome Group Photo** – *Partner: Hell Energy SK*

10:30 – 12:00 **Plenary Session 2[A]** – Session Chair – *M.Eng. Ing. M. Košuda, PhD.*

10:30 – 10:45 Dynamic inertia measurement of an aircraft mass properties – *P. Čechura, J. Valenta, J. Hanyš, T. Čenský, Š. Škof, A. Kratochvíl*

10:45 – 11:00 Thermal Drift Cancellation for 3D Magnetic Sensors via Ratiometric Vector Decoding – *M. Červenka, R. Koštial, J. Chlebek*

11:00 – 11:15 Experimental Evaluation of UAS Positioning Accuracy Using RTK – *N. Češkovič Gecejová, M. Češkovič, A. Jacurová*

11:15 – 11:30 Experimental Evaluation of Atmospheric Sensor Placement on UAV Platforms for Local Weather Measurements – *B. Bernátová, P. Pecho, R. Dianovský, A. Novák*

11:30 – 11:45 Towards Efficient Onboard AI for Space Weather: Compressing and Simulating SCSS-Net for FPGA Deployment – *M. Sarnovsky, P. Butka, S. Kapitančík, J. Šinaľ, Š. Mackovjak*

11:45 – 12:00 Improving the Segmentation of Coronal Holes and Active Regions in Solar EUV Satellite Image Sequences Using Temporal Fusion – *P. Butka, M. Sarnovský, A. Lutskyi*

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10:30 – 12:00 **Plenary Session 2[B]** – Session Chair – *doc. Ing. M. Češkovič, PhD.*

10:30 – 10:45 The Use of Unmanned Systems in Military Logistics Support – *N. Morchová, Z. Korecki, T. Hoika*

10:45 – 11:00 Design of a new static pressure probe – *P. Gašparovič, L. Főző, M. Divok*

11:00 – 11:15 Preference Robust Allocation of Unmanned Aircraft for Traffic Surveillance in Amman – *O. Alharasees, M. Fawaier, H. A. AL Hasanat, F. Zolfaghari, A. Kilikevičius, U. Kale*

11:15 – 11:30 Fuel as a Sensor: Potential and Limits of F-34 Quality Data for Storage Infrastructure Screening – *P. Davidová, P. Kalvoda, D. Demydenko*

11:30 – 11:45 Limitations of Military Aviation Accident Investigations and Their Impact on Flight Safety – *O. Zavila, J. Ulvr, P. Michenka, P. Engelová, J. Mazánek*

11:45 – 12:00 Scenario-Based Safety Assessment of Military UAS Integration – *T. Pechacek, J. Ulvr, J. Kalvoda, J. Mazanek, V. Mazankova*

12:00 – 13:15 **Lunch Break**

13:15 – 14:45 **Plenary Session 3[A]** – *Session Chair – Ing. P. Šváb, PhD.*

13:15 – 13:30 Measured-Latency Analysis and Causal GNSS Velocity Compensation for ESKF State Estimation in an Experimental Rocket – *M. Kment, R. Bréda, J. Novotňák, M. Schrötter*

13:30 – 13:45 Dynamic Charging of Electric Tow Tractors for Airport Taxi Operations – *H. Bínová, F. Kekula, O. Hykš, J.Sadil, M. Hykšová, P. Vávra*

13:45 – 14:00 The Relationship Between Flight Experience and Flight Path Adherence – *V. Smrz, P. Michenka, S. Hoskova-Mayerova, P. Engelova, O. Zavila*

14:00 – 14:15 Development and Evaluation of a Flight Simulator Interface for a Three-Axis Motion Platform Demonstrator – *J. Charezinski, D. Urban, V. Socha, T. Kral, L. Hanakova, S. Kusmirek, K. Stuchlikova, P. Hanak*

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14:15 – 14:30 Passive Stabilization System for Stratospheric Balloon Payloads – *P. Pecho, B. Bernátová, R. Dianovský, M. Bugaj*

14:30 – 14:45 Effect of Mild to Moderate Normobaric Hypoxia on Auditory Short-Term Memory in Pilots – *D. Kotlík, L. Hanáková, B. Oniščenko, V. Socha*

13:15 – 14:45 Poster Session[C] – Session Chair – *prof. Ing. L. Főző, PhD.*

– Fractional Calculus in Aviation: A Review of Possible Applications and Research Directions – *I. Petráš*

– Seasonality, Purchasing Power, and the Post-Pandemic Recovery of Air Passenger Transport in Slovakia: Evidence from Quarterly Data, 2015–2025 – *V. Keslerová , P. Korba, M. Kišš, P. Hanák*

– Space Weather Risks in Aviation: Education and Planned Radiation Measurements – *R. Másilková, R. Soušek, L. Choma*

– Decision Support System Software Solution for Fog Forecasting in Airport Areas – *M. Kelemen, V. Polishchuk, I. Polishchuk, M. Kelemen, Jr., L. Choma*

– Functional Safety Verification of a Switching Matrix – *G. Györök*

– A Two-Level Fuzzy Multi-Criteria Model for Assessing the Balance between Airport Security Screening Measures and Selected Human Rights – *B. Mikula, I. Polishchuk, Y. Mlavets*

– UAV based traffic monitoring system using machine vision – *P. Udvardy, B. Kiss, B. Beszédes, L. Dimén*

– Morphological and Phase Characterisation of Hot Rolling Mill Scale for Potential Use as Polymer Composite Fillers in the Aeronautics Industry – *L. Knapcikova, A. Behunova, M. Behun, J. Husar*

– Physics-Conscious AI for Autonomous UAV Missions: A Latent World-Model Judge for Aligning Language-Conditioned Planners – *A. Kaplan*

– Conceptual Design of an Autonomous Control System for a Dual-Mission Rotorcraft UAV in Crisis and Military Operations – *A. Novák, A. Kocjan, T. Lusiak, D. Delgado*

– Automated Calibration Environment of Advanced Magnetometric Platforms for Small Unmanned Aerial Vehicles – *A. Polakovič, K. Draganová, J. Novotňák, E. Dolný*

– Dual Assessment of Engineered Indoor Environment Control – *B. Beszédes, G. Kánai, L. Dimén, P. Udvardy*

– Measurement Informed Multifidelity Learning for Trim and Stability Constrained Design of a Fixed Wing Unmanned Aircraft – *M. Fawaier, O. Alharasees, H. A. AL Hasanat, F. Zolfaghari, A. Kilikevičius, U. Kale*

– Safely Integrating Thousands of Autonomous Drones into Shared Airspace: A Concise Review of U-space Enablers and Open Challenges – *V. Szomosi, J. Šimčák, J. Király, Z. Čonka*

– Conceptual Architecture for UAV-Assisted Warehouse Digital Twin Synchronization Supported by Laboratory RFID Measurements – *J. Husár, M. Omelianenko, L. Knapčíková, P. Trojanowski*

– Economic Resilience and Airspace Reconfiguration of Central European ANSPs in the Era of Compounding Crises – *M. Boháč, A. Tobisová, A. Turac, M. Šmehlík, M. Čechová, R. Rozenberg*

– Elliptically Corrugated Triangular Tabs for Passive Control of Subsonic Jet Mixing – *V. Vasu Kannah D L , S. Bogadi, D. Joshua, R. Kumar*

– Accident-Informed and Rule-Constrained MachineLearning Framework for Human–System Anomaly Recognition During Aircraft Climb and Cruise – *Q. Mahmood, R. Alhajj*

– A Conceptual Framework for Integrating N-dot Control and Fuel Scheduling in Small Turbojet Engines – *R. Andoga, L. Főző, D. Hriadel*

15:15 – 17:15	
18:30 – 19:00	**Gala Evening**
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27.11.2026 – Friday

08:30 – 09:00 Registration

09:00 – 10:30 **Plenary Session 5^{A}** – Session Chair – *doc. Ing. M. Antoško, PhD.*

09:00 – 09:15 Application of Reverse Engineering in the Simulation and Experimental Evaluation of the Antenna Radiation Pattern on an Aircraft Platform – *M. Češkovič, N. Češkovič Gecejová, P. Kurdel, D. Koreň*

09:15 – 09:30 Towards Evidence-Based Functional Hazard Assessment: Identifying System-Level Safety Information from Aircraft Operational Occurrence Reports and Maintenance Data – *K. B. Ouattara, J. Kraus*

09:30 – 09:45 Operational Safety Assessment of Wind Turbines in the Vicinity of Aerodromes: A Systematic Review – *J. Juracka, J. Chlebek, J. Hammer*

09:45 – 10:00 Land-Cover, Population, and Protected-Area Contexts of Selected Slovak Airports: A Comparative Multi-Scale GIS Analysis – *D. D. Sanchez, A. Novák, J. Zyka*

10:00 – 10:15 Design and Functional Verification of an Enhanced UAV Operator Pre-selection System – *M. Tirpáková, Z. Szőke, Z. Hajduová, R. Bréda, J. Kessler*

10:15 – 10:30 Methodology for Constructing a Physically Consistent Meteorological Dataset for Neuro-Fuzzy Fog Prediction in Airport Areas – *K. Ozdincová, L. Choma, M. Kelemen, V. Polishchuk*

09:00 – 10:30 **Plenary Session 5^{B}** – Session Chair – *Ing. E. Jenčová, PhD.*

09:00 – 09:15 Airlines and Global Crises from Crisis Management to Strategic Resilience – *A. Moravec Kružlicová*

09:15 – 09:30 UAV Photogrammetry for Airport Pavement Inspection: From Area-Wide Screening to High-Detail Reconstruction – *L. Cicmanec, S. Pechanek, J. Vomela, D. Demydenko*

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09:30 – 09:45 A Conceptual Multi-Agent Architecture for Coordinated Decision Support in Civil Aviation – *P. Šváb, S. Čikovský, M. Kišš*

09:45 – 10:00 Recent Trends in Sustainable Drones – *D. D. Gkritzapi, P. Zikmund*

10:00 – 10:15 Cognitive Skill Development for Air Traffic Controllers Using Extended Reality: an analysis of stress and performance – first steps – *J. Sallai-Füstös, T. Vas, P. Dunai, K. Károly*

10:15 – 10:30 Proposed VOST model for information support in airport emergency management – *P. Králová, L. Brumarová, J. Brumar, N. Kužílková*

10:30 – 10:45 **Coffee Break** – *Partner: Hell Energy SK*

10:45 – 12:15 **Plenary Session 6[A]** – Session Chair – *doc. Ing. A. Tobisová, PhD.*

10:45 – 11:00 Enhancing the Safety of Unmanned Aerial Systems Integration into Airspace Through Remote Identification – *P. Táborský, B. Kandera*

11:00 – 11:15 Integrated Security Systems in Critical Infrastructure and Requirements for Operational Performance Measurement – *J. Jevčák, N. Katan, M. Kelemen Jr.*

11:15 – 11:30 Technical Reliability Analysis of Hydrogen-Embrittlement Failures in WT9 Elevator-Control Rod Ends – *M. Divok, B. Rácek, M. Hocko*

11:30 – 11:45 Design and Numerical Verification of a Multi-Axis Motion Platform for Somatogyral Illusion Training – *K. Stuchlikova, D. Urban, S. Kusmirek, V. Socha, L. Hanakova, L. Socha, J. Charezinsky, M. Hovanec*

11:45 – 12:00 A Dynamic Risk Assessment and Decision-Support Model for PCB-Contaminated Areas – *H. Pačaiová, M. Hovanec, P. Korba, K. Dojčánová, A. Sütőová*

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12:00 – 12:15 Analysis of Polymer Surface Microgeometry Alterations Following Exposure to Deicing Agents Using Confocal Microscopy – *D. Demydenko, P. Kalvoda, P. Davidová, J. Ulvr*

10:45 – 12:15 **Plenary Session 6[B]** – Session Chair – *M. Koščáková, PhD.*

10:45 – 11:00 Modelling and Simulation of the Airbus A320 Electrical Power Distribution System under Different Operating Scenarios – *M. Schrötter, A. Yakovlieva, M. Jozeková, V. Valenčin*

11:00 – 11:15 Students' Needs and Preferences in Aviation English Teaching for Hybrid Course Design at the Faculty of Aeronautics, TUKE – *M. Semančíková, A. Čekanová, R. Rozenberg*

11:15 – 11:30 Fuel-Selector Misconfiguration and Engine Power Loss After Takeoff: Evidence-Based Analysis of a Viper SD-4 Serious Incident – *M. Divok, B. Rácek*

11:30 – 11:45 Experimental Study of Anti-Wear and Anti-Friction Properties of Jet Fuel Blends with Fatty Acid Esters – *S. Boichenko, R. Kostyunik, M. Češkovič, P. Kurdel, A. Yakovlieva, I. Shkilniuk*

11:45 – 12:00 Sanctions Mechanisms in Civil Aviation: Taxonomy, Latency, Erodibility and Blowback Incidence – *M. Jakubík, A. Novák Sedláčková*

12:00 – 12:15 Airline Sustainability as a Management Problem: Six Domains, Three Economic Mechanisms and Business-Model Conditioning – *H. Sun, A. Novák Sedláčková*

12:15 – 13:00 **Lunch break**

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27.11.2026 – Friday

13:00 – 14:30 **Plenary Session 7A** – Session Chair – *Ing. M. Schrötter, PhD.*

13:00 – 13:15 Sensitivity of GPS Positioning to Ionospheric and Tropospheric Delays Under Varying Elevation Masks for Aviation Applications – *V. Kornia, J. Sabo, S. Tomaščin, R. Rozenberg*

13:15 – 13:30 Sensory Cue Requirements for Flight Illusion Induction: A Systematic Review of Simulation Technologies and Experimental Evidence – *L. Socha, P, Hanák, V. Socha, E. Jenčová, L. Hanáková, D.Urban, S. Kušmírek, T. Gajdušková, J. Charezinski, T. Havel*

13:30 – 13:45 Addressing Airport Infrastructure Capacity Constraints Using Queuing Theory – *E. Jenčová, Z. Sotáková, P. Koščák, M. Koščáková, A. Varga*

13:45 – 14:00 Automatic Cloud Detection from Sentinel-2 Imagery Using Tile-Based Image Classification – *S. Hubaľ, P. Kaľavský, V. Kornia, Z. Sotáková*

14:00 – 14:15 ATC Workload at a Regional Airport: The Impact of Training Flights – *Ľ. Nosál, A. Novák*

14:15 – 14:30 Benchmarking Documented Temperature-Controlled Cargo Readiness at Five European Airports: An Entropy–TOPSIS Assessment – *Z. Hajduová, R. Tranžík, M. Jozeková, K. Tibenská*

13:00 – 14:30 **Plenary Session 7B** – Session Chair – *Ing. B. Rácek, PhD.*

13:00 – 13:15 Assessment of Instrument Approach Safety Using Aviation Occurrence Analysis and Flight Simulation – *S. Tomaščin, V. Kornia, M. Antoško, M. Kelemen Jr., J. Sabo, A. Turac*

13:15 – 13:30 A Mmulti-Criteria Decision Framework for Verifying Circular Economy Integration into Airport Operational Models – *A. Turac, A. Tobisová, R. Rozenberg, D. Majorská, M. Čechová, M. Šmehlík*

13:30 – 13:45 Economic Efficiency of an Intelligent Voice Communication System (iVCS) for Air Traffic Control Training – *M. Antoško, M. Sánchez, M. Čechová, B. Reichstadter, S. Tomaščin, K. Ozdincova*

13:45 – 14:00 Parametric Simulation Model of Airport Terminal Processes under Different Flight Schedule Configurations – *T. Gajdušková, E.d Jenčová, D. Majorská, S. Tomaščin, K. Hrešková*

14:00 – 14:15 Comparative Economic Analysis of Full-Service and Low-Cost Airlines Using Standardized Performance Indicators – *S. Čikovský, P. Šváb, P. Dzurovčin, N. Daneshjo, M. Vencel', A. Vereščák*

14:15 – 14:30 Analysis of the Effectiveness of FNPT II Simulation and Conventional Aircraft Training in Instrument Rating Acquisition – *M. Šmehlík, A. Tobisová, J. Sabo, A. Turac, D. Majorská*

End of the Conference

Workshop – *Modern Technologies in Aviation Practice*

You are cordially invited to attend the workshop *Modern Technologies in Aviation Practice*, which will take place in the Billiard Table Passage on Thursday, 26 November 2026, from 10:30 to 12:00. This workshop aims to bring together professionals, researchers, and students interested in the latest technological developments shaping contemporary aviation. Participants will have the opportunity to engage in discussions, share insights, and gain deeper understanding of current challenges and future directions.

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