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 – 14:30	Plenary Session 3^{A} & Poster Session^{C}
15:15 – 17:30 *	Departure and Arrival of the Historic Tram
19:00 – 20:00 **	Gala Evening
20:00 – 21:00 **	Gala Dinner
21:00 – 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

* *Outside activity*

** *Dress code – Business Casual*

TECHNICAL UNIVERSITY OF KOŠICE
Faculty of Aeronautics

NTAD

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	Modernising LPS SR technical systems – *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**
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	The Use of Unmanned Systems in Military Logistics Support – *N. Morchová, Z. Korecki, T. Hoika*
11:15 – 11:30	Dynamic Charging of Electric Tow Tractors for Airport Taxi Operations – *H. Bínová, F. Kekula, O. Hykš, J. Sadil, M. Hykšová, P. Vávra*
11:30 – 11:45	Towards Efficient Onboard AI for Space Weather: Compressing and Simulating SCSS-Net for FPGA Deployment – *M. Sarnovský, P. Butka, S. Kapitančík, J. Šinaľ, Š. Mackovjak*

TECHNICAL UNIVERSITY OF KOŠICE
Faculty of Aeronautics

NTAD

NTAD Programme – Day 1

26.11.2026 – Thursday

11:45 – 12:00	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*
10:30 – 12:00	**Plenary Session 2^{B}** – Session Chair – *doc. Ing. M. Češkovič, PhD.*
10:30 – 10:45	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*
10:45 – 11:00	Design of a new static pressure probe – *P. Gašparovič, L. Főző, M. Divok*
11:00 – 11:15	Analysis of Polymer Surface Microgeometry Alterations Following Exposure to Deicing Agents Using Confocal Microscopy – *D. Demydenko, P. Kalvoda, P. Davidová, J. Ulvr*
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**

TECHNICAL UNIVERSITY OF KOŠICE
Faculty of Aeronautics

NTAD

NTAD Programme – Day 1

26.11.2026 – Thursday

13:15 – 14:30 **Plenary Session 3A** – *Session Chair – Ing. P. Šváb, PhD.*

13:15 – 13:30 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. Charezinski, M. Hovanec*

13:30 – 13:45 The Relationship Between Flight Experience and Flight Path Adherence – *V. Smrz, P. Michenka, S. Hoskova-Mayerova, P. Engelova, O. Zavila*

13:45 – 14:00 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*

14:00 – 14:15 Passive Stabilization System for Stratospheric Balloon Payloads – *P. Pecho, B. Bernátová, R. Dianovský, M. Bugaj*

14:15 – 14:30 Effect of Mild to Moderate Normobaric Hypoxia on Auditory Short-Term Memory in Pilots – *D. Kotlík, L. Hanáková, B. Oniščenko, V. Socha*

13:15 – 14:30 **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 Machine Learning 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, V. Valenčin*
- Improving the Segmentation of Coronal Holes and Active Regions in Solar EUV Satellite Image Sequences Using Temporal Fusion – *P. Butka, M. Sarnovský, A. Lutskyi*

15:15 – 17:30 **Departure and Arrival of the Historic Tram**

19:00 – 20:00 **Gala Evening**

20:00 – 21:00 **Gala Dinner**

21:00 – 22:00 **Gala Ceremony**

TECHNICAL UNIVERSITY OF KOŠICE
Faculty of Aeronautics

NTAD

NTAD Programme – Day 2

27.11.2026 – Friday

08:30 – 09:00	Registration
09:00 – 10:30	**Plenary Session 5A** – Session Chair – *doc. Ing. M. Antoško, PhD.*
09:00 – 09:15	Experimental Evaluation of UAS Positioning Accuracy Using RTK – *N. Češkovič Gecejová, M. Češkovič, A. Jacurová*
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*

TECHNICAL UNIVERSITY OF KOŠICE
Faculty of Aeronautics

NTAD

NTAD Programme – Day 2

27.11.2026 – Friday

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*

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**

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. K andera*

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

TECHNICAL UNIVERSITY OF KOŠICE
Faculty of Aeronautics

NTAD

NTAD Programme – Day 2

27.11.2026 – Friday

11:15 – 11:30 Comparative Economic Analysis of Full-Service and Low-Cost Airlines Using Standardized Performance Indicators – *S. Čikovský, P. Šváb, P. Dzurovčin, N. Daneshjo, M. Venceľ, A. Vereščák*

11:30 – 11:45 Measured-Latency Analysis and Causal GNSS Velocity Compensation for ESKF State Estimation in an Experimental Rocket – *M. Kment, R. Bréda, J. Novotňák, M. Schrötter*

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*

12:00 – 12:15 Benchmarking Documented Temperature-Controlled Cargo Readiness at Five European Airports: An Entropy–TOPSIS Assessment – Z. Hajduová, R. Tranžík, M. Jozeková, K. Tibenská

10:45 – 12:15 **Plenary Session 6[B]** – Session Chair – *M. Koščáková, MA, 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 Technical Reliability Analysis of Hydrogen-Embrittlement Failures in WT9 Elevator-Control Rod Ends – *M. Divok, B. Rácek, M. Hocko*

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*

TECHNICAL UNIVERSITY OF KOŠICE
Faculty of Aeronautics

NTAD

NTAD Programme – Day 2

27.11.2026 – Friday

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

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 Multi-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. Jenčová, D. Majorská, S. Tomaščin, K. Hrešková*

14:00 – 14:15 Students' Needs and Preferences in Aviation English Teaching for Hybrid Course Design at the Faculty of Aeronautics, TUKE – *M. Semančíková, A. Čekanová, R. Rozenberg*

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 and Closing Ceremony

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.

Thank you!

We look forward to seeing you at NTAD 2027
at the Grandhotel Starý Smokovec
on 25–26 November 2027.