



ISATECH'25

Online/Hybrid

3rd-5th December 2025 | ALMATY, KAZAKHSTAN
Civil Aviation Academy of the Republic of Kazakhstan



ISATECH'25 Program - DAY 1

Almaty Time UTC+6		Almaty Hall - 03 December 2025, Wednesday
		Program Link

08:30 - 09:00 - Registration

09:00-09:30	Opening Session	Session Chair: T. Hikmet Karakoc & Nalan Radekshay
		Opening Concert
		K. Radekshay - Vice Rector by Scientific activity CAK, Kazakhstan B.T. Hikmet Karakoc, President of SARES, Piri Reis University, Istanbul, Turkey
		Belken Seidakhmetov, Honorary Chair of ISATECH'25, Rector of Civil Aviation Academy, Kazakhstan
		Nafiz Aras, Rector of the Piri Reis University, Turkey
		Ali Yuldas, Consul for Science and Technology, Consulate-General of the People's Republic of China in Almaty
		Hailiang Li, Dean of College of computer science and technology, Civil Aviation University of China
		Moldir Kuznetsov, National Engineering Academy of the Republic of the Kazakhstan

09:30 - 10:30	Opening Remarks Session	Can aerodynamics of engineering make a contribution to the transition to the hydrogen economy?
		Max F. Platzer, Lifetime Honorary President of SARES, USA
		New developments in sustainable aviation and drone technologies

T. Hikmet Karakoc, President of SARES, Piri Reis University, Istanbul, Turkey		
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10:30-11:00 Coffee Break

11:00 - 12:30	2nd Keynote Session	Session Chair: T. Hikmet Karakoc
		Offshore Helium Filling with Application to Inertial Navigation
		Chingiz Halyev, Istanbul Technical University, Faculty of Aeronautics and Astronautics, Turkey
		Future trends in Aircraft Maintenance Training Organization (FAMT 247)
		Muhsin Ali Elham, Abu Dhabi Polytechnic, UAE
		A Study of Elastic Composites Based on a Two-Component Approach and the Deformation Characteristics of Naturally Twisted Rods in a Temperature Field
		Rashidov Rakhimov Zhambayevich
		Overview of the practical application of cable-driven parallel robots

12:30-14:00 Lunch Break

14:00 - 15:30	2nd Keynote Session	Session Chair: Mami Higashimura
		Enabling of Data-driven Aircraft Fleet Management
		Adrian Agostolillo, Senior Lead, Technical Innovation, Netherlands
		myTECHNICS AMMS Technical Services A.S., Turkey
		Okun Oskan, MyTechnics, Turkey
		SARES Singapore Chapter, Singapore

15:30-16:00 Coffee Break

16:00 - 17:30	2nd Technical Session	Session Chair: Zeynep Radekshay
		Carbon Nanotube Reinforced Composites for Aerospace and UAV Structures: Fatigue and Microcrack Resistance
		Ashraf Baizamova, Khushay Makhmetov, Davit Kanyagayev, Gulnar Kalyayeva, Rajeshwar Kalyayev
		Analysis of the economic efficiency of using Unmanned Aerial Vehicles in international transport corridors (the case of TRANCECA)
		Dana Sosunova, Bulga Karimova, Heybatulla Akhmetov
		A Study on Unmanned Aerial Vehicle Applications in Maritime Operations
		Ali Cimen Bayrak
		Analysis of Anti-Icing and De-Icing Systems for Unmanned Aerial Vehicles (UAVs) under Geographical Conditions
		Kenneth Babu Sridharan
		Modelling and simulation of a multistage UAV for autonomous package delivery

MTANDEL MAMBRADOV, Nikolay Radekshayev, Zeynep Makhmetova

Evaluating Transfer Learning Models for Autonomous UAV Threat Detection

Tug Ozar

Almaty Time UTC+6		Almaty - 03 December 2025, Wednesday
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08:30 - 09:00 - Registration

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10:30-11:00 Coffee Break

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12:30-14:00 Lunch Break

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15:30-16:00 Coffee Break

16:00 - 17:30	2nd Technical Session	Session Chair: Nurhan Sahguncu
		Assessment of the Application of Digital Logistics and Artificial Intelligence Technologies in the Operation of International Transport Corridors
		Ayhan Muratbayev
		Evaluation of the Economic Efficiency of Hybrid Forecasting Models for Non-Scheduled Passenger Air Transportation
		Dzhigit Nuralov, Nural Agayev
		Formation of Air Transport Tariffs for Non-Stackable Cargo
		Vladimir Samoylov
		Exploring Attention Mechanisms in Deep Learning Models for Aircraft Gas Turbine Remaining Useful Life Estimation
		Pavani Et
		Formation of Sensor-Data Architecture in Autonomous Email Systems

Semir Asanov

Digital Twin for Aviation Infrastructure Maintenance: Forecasting Spare Parts for Meteorological Equipment and HF Radio Frequencies from Unsupervised Sensing Data

Mural Amalov, Mural Zhigabov

Almaty Time UTC+6		Turkmen - 03 December 2025, Wednesday
		Program Link

08:30 - 09:00 - Registration

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10:30-11:00 Coffee Break

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12:30-14:00 Lunch Break

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15:30-16:00 Coffee Break

15:00 - 16:00	2nd Technical Session	Session Chair: Denys Rost
		3D CFD Pre-Calibration of a Two-Port Differential-Pressure Angle-of-Attack Sensor at Low Subsonic Speeds
		Rashid Guliyev
		Comparative Analysis of Semi-Elliptical and NACA Optimization Methods for Dolphin Airfoil Design
		Zeynep Z. Denizli, Ivan A. Rostov, Oliver P. Rostov, Alexander C. Rostov, Goren S. Vorobey
		Operational Effects of Transient Airspace Closure on Traffic Flow within Azerbaijan Airspace
		Rashid Huseynov
		Experimental and numerical studies on turbulent channel flow of polymeric solutions at maximum drag reduction
		Alpay Aras
		Experimental Investigation of Flow Characteristics Over a Low-Sweep Angle Diamond Wing at Low Reynolds Number Using PIV

Alkan Yavuzoglu

Numerical Investigation of Supersonic Large-Diameter Management on the NUS21-0424 Airfoil

De-Tai Huang, Tim Tran, Long Vu



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ISATECH'25 Program - DAY 2			
Almaty Time UTC+6		Almaty Time UTC+6	
Almaty Hall - 04 December 2025, Thursday			
Teams Link			
09:30 - 10:00	Registration		
10:00 - 11:00	5th Keynote Session		
Session Chair: T. Wilmot Karakoz			
Methods and means for improving the accuracy of GPS receivers			
Islam Ighembarova, ISATECH - Azerbaijan Chapter			
Solar Based Navigation Support for UAVs in GPS Denied and Signal-Jammed Environments Using an Airborne Controlled Sunlight Tracker			
Nguyen Dinh-Dung, Faculty of Aerospace Engineering, Le Quy Don Technical University, Hanoi, Vietnam			
11:00 - 12:30	6th Technical Session		
Session Chair: Zeynep Kadirbekbayeva			
Design and Development of a Passenger Unmanned Aerial Vehicle Integrated with an Unmanned Surface Vehicle for Cooperative Maritime Missions			
Abstract 516 Dayton			
A Multi-aircraft Collision Avoidance System for Small Fixed-wing UAVs			
Kousuma Bessone, Onigo Ferrara			
Improving Airport Perimeter Protection System Through the Integration of Drone Technology: The Case of Hajer Aljeen International Airport			
Ruslan Ruslanov, Ramil Makhmarov			
Selection Methodology of De-icing subsystem for UAVs according to various surface models			
Keremhabib Seidmurov			
UAV-Based FSD Detection on Airport Runways Using YOLOv11: A Cost-Effective Approach for Vietnam Aviation Safety			
Muk-Young Nguyen-Truong, Vo Nam-Anh Dang, Gia Bao Lu, Hoang-Hang-Yen Nguyen, Xuan-Cong Nguyen			
Design and implementation of a modular avionics hardware system for the quadcopter UAV			
AFZANDI MAMMADOV, Sara Mammadova, Nikolay Rykshilov, Dikhan Ramazov			
12:30-14:00	Lunch Break		
14:00 - 15:30	7th Technical Session		
Session Chair: Yusef Dagdelen			
A review of artificial intelligence for competency-based assessment in UAV operator training			
Hugueni Abdullayev			
From C++ to Dubins Method - A Practical Educational Framework for Civil Aviation UAV Software Development			
Hina Zhelezova			
Dynamic Coverage Path Planning for Airplane Surface Inspection Based on an Unmanned Ground Vehicle			
Rauling Bai			
EVOLUTION OF UNMANNED AERIAL VEHICLES FROM THE FIRST SAMPLERS TO TECHNOLOGY SYNERGY			
Nikolay Chiriyakov, Vladimir Koshmarov			
UAV-based Fast Coverage Path Planning with Enhanced Regularity for Automated Aircraft Skin Inspection			
Hailu Xu			
The impact of Unmanned Aerial Vehicles and Insider Threats on Civil Aviation Security: Challenges and Countermeasures			
Shakhmurov Serik			
15:30-16:00	Coffee Break		
16:00 - 17:30	8th Keynote Session		
Session Chair: Eshel Dagdelen			
Refined Chemical Equilibrium Modeling for Cryogenic Combustion and Phase Transitions			
Pavlov Abdullayev, National Aviation Academy, Department of Flight Vehicles and Aviation Engines, Head of Department, Azerbaijan			
MRO Challenges & Risks for Hydrogen-Powered Aviation			
Eve McIsaac, Embry Riddle Aeronautical University, USA			
Total Recall: AI-Driven Circular MRO			
Savine Kabanov, Polytechnique Montreal, Canada			
Almaty Time UTC+6		Almaty Time UTC+6	
Almaty - 05 December 2025, Thursday			
Teams Link			
09:30 - 10:00	Registration		
10:00 - 11:00	5th Keynote Session		
Session Chair: T. Wilmot Karakoz			
Methods and means for improving the accuracy of GPS receivers			
Islam Ighembarova, ISATECH - Azerbaijan Chapter			
Solar Based Navigation Support for UAVs in GPS Denied and Signal-Jammed Environments Using an Airborne Controlled Sunlight Tracker			
Nguyen Dinh-Dung, Faculty of Aerospace Engineering, Le Quy Don Technical University, Hanoi, Vietnam			
11:00 - 12:30	6th Technical Session		
Session Chair: Zeynep Kadirbekbayeva			
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14:00 - 15:30	7th Technical Session		
Session Chair: Yusef Dagdelen			
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Total Recall: AI-Driven Circular MRO			
Savine Kabanov, Polytechnique Montreal, Canada			
Almaty Time UTC+6		Almaty Time UTC+6	
Almaty - 06 December 2025, Thursday			
Teams Link			
09:30 - 10:00	Registration		
10:00 - 11:00	5th Keynote Session		
Session Chair: T. Wilmot Karakoz			
Methods and means for improving the accuracy of GPS receivers			
Islam Ighembarova, ISATECH - Azerbaijan Chapter			
Solar Based Navigation Support for UAVs in GPS Denied and Signal-Jammed Environments Using an Airborne Controlled Sunlight Tracker			
Nguyen Dinh-Dung, Faculty of Aerospace Engineering, Le Quy Don Technical University, Hanoi, Vietnam			
11:00 - 12:30	6th Technical Session		
Session Chair: Zeynep Kadirbekbayeva			
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ISATECH'25 Program - DAY 3

Almaty Time UTC+6		Almaty Hall - 03 December 2025, Friday	Almaty Time UTC+6		Almaty Hall - 04 December 2025, Friday	Almaty Time UTC+6		Turkmen - 05 December 2025, Friday
		Terms Link			Terms Link			Terms Link
09:30 - 10:00	Registration							
09:30 - 11:00	10th Technical Session	<div>Session Chair: Zeynep Badalbekbayeva</div> <div>Transformation in Maritime Communications: Requirements on the Path from GMDSS to Autonomous Ships and Traffic's Global Solution</div> <div>Murat Saka, Taylan Acarer</div> <div>Development of a Hardware-Software Toolset for Modeling and Assessing Mutual Radar Interference</div> <div>Alig Yassanov, Islam Iqbalov, Teymur Alipov</div> <div>Comparison of Approximate Riemann Sums for the One-Dimensional Euler Equations</div> <div>Do Tai Duong, Tuan Anh Tran, Bach Tran</div> <div>LSTM Based Atmospheric Reentry Trajectory Prediction</div> <div>Koushane Boussou, Jelle Coello</div> <div>Integrated control and mechanical structure model for robotic machine complexes</div> <div>Sami Aoudi</div> <div>EQUALIZER ROBUSTNESS FROM THE DROPLET SIZE - A SHM-MODEL APPROACH</div> <div>Van Hoang Thi Hong, Anh Tran Tran</div>	09:30 - 11:00	10th Technical Session	<div>Session Chair: Tatyana Kurbayeva</div> <div>Models of effective management in the development of small regional airport infrastructure</div> <div>Vassana Alina</div> <div>Development of an Algorithm for Generating Standard Operational Procedures for Airport Access Control Points Based on Regulatory Analysis Using Neural Network Models</div> <div>Vladimir Nikitin</div> <div>Application and development of biometric identification technologies in airports</div> <div>Sydney Terranova, Anur Abhishekare</div> <div>Factors affecting the passenger behavior intention towards the airport self-service technology</div> <div>Mitch Anh Tran</div> <div>A Literature Overview of Operational Planning Optimization in Airline Maintenance Using Artificial Intelligence</div> <div>Shashwath Sark</div> <div>Methods for Assessing Customer Satisfaction in the Context of Digital Transformation</div> <div>Fatma Rebe</div>	09:30 - 11:00	10th Technical Session	<div>Session Chair: Zeynep Badalbekbayeva</div> <div>Small-Size Turbogenerator Design Problems, Development Prospects and Working Process Optimization</div> <div>Teymur Tashiev</div> <div>Numerical Study of Flow Structure and Energy Dissipation over a Truncated Rib in a Slipping Rectangular Channel</div> <div>Do Tai Duong, Thach Thien Nguyen</div> <div>Implementing Green Corridors in Kazakhstan's Airports to Incentivize Sustainable Aviation Fuel Use by Cargo Operators</div> <div>Nurkhan Temptayev</div>
11:00 - 11:15	Coffee Break		11:00 - 11:15	Coffee Break		11:00 - 11:15	Coffee Break	
11:15 - 12:15	10th Technical Session	<div>Session Chair: Rinat Shonov</div> <div>Long-Term Projection of EU Aviation CO₂ Emissions: A Comparative Analysis of Time Series Approaches</div> <div>Ozan Ozturk, Melik Yildiz</div> <div>Enhancement of the service life of machine components through combined methods</div> <div>Recent Special technique and technology</div> <div>Wear Characteristics of the Working Surface of the Top Drive Waspings</div> <div>Igor Shatalov</div> <div>Analysis of a Self-Reinforcing ANSYS Model Based on 3DMS</div> <div>Huanga Bachthuyev</div>	11:15 - 12:15	10th Technical Session	<div>Session Chair: Igor Wilson</div> <div>Improvement of Airport Infrastructure through the Implementation of Smart Airport Technologies and Sustainable Development</div> <div>Angelen Jauron</div> <div>Analysis of intelligent stress monitoring systems based on heart rate and skin conductance in air traffic controllers</div> <div>Serino Ruyter</div> <div>On Some Aspects of Monitoring Acoustic Noise of Civil Aircraft</div> <div>Maysa Abdullayeva, Bilal Aghayev</div> <div>Ensuring Airworthiness and Flight Safety of Air-Taxi (VTOL) Transport Standards and Prospects for Application in Kazakhstan</div> <div>Yermolayev Farukh, Civil Aviation Academy</div>	11:15 - 12:15	10th Technical Session	<div>Session Chair: Dmitry Kise</div> <div>Research into the generation of electricity using piezoelectric materials at airports</div> <div>Ramiz Kurbayev, Shukur Mavlonov, Ulker Ekinov</div> <div>Organizational Stress, Resource Limitations and their effects on ground operations safety</div> <div>Ada, J Balmainova</div> <div>High-Resolution Scanning Electron Microscopy (SEM) analysis of MAXCUT PAN MAXCUT piezocomposites for energy applications</div> <div>Serino Mammadova</div> <div>Aviation Specialist Training in Collaboration: Current Status, Prospects, and Challenges</div> <div>Nurkhan Temptayev</div>
12:15 - 12:30	Lunch Break		12:15 - 12:30	Lunch Break		12:15 - 12:30	Lunch Break	
13:30 - 15:00	10th Technical Session	<div>Session Chair: Akbar Kurbayev</div> <div>Investigation of the influence of several parameters on the muscle jump angle of a rifle barrel during firing</div> <div>Nguy Nguyen Van, Ba The Anh Pham, Van Dung Nguyen, Tu Quyen Uong</div> <div>The Effect of Gamma Radiation on the Optical and Photoconductive Properties of CdTe/Te Photocrytal</div> <div>Omar Mammadov</div> <div>Thermo and Magnetothermodynamic Properties of Thermoelements and Coolers Based on a Solid Solution of Bi_{0.85}Sb_{0.15}</div> <div>Safar Seid, Mayel Tagiyev, Islam Iqbalov, Anvarov Alipov</div> <div>Green Initiatives for ETACAPORT</div> <div>Semya Kutyayeva, Rafiya Semya</div> <div>Modern Trends in the Civil Aviation Development in The Republic of Kazakhstan</div> <div>Bekov Seidakhmetov, Kayrat Zhakypov, Oghlas Sakonov, Dmitry Kim, Marina Skiba</div> <div>Integration of Navigation into the Global Aviation System</div> <div>Chadgers Tazimshova</div>	13:30 - 15:00	10th Technical Session	<div>Session Chair: Farigrah Zhambolova</div> <div>Improving the technological processes of the warehouse infrastructure of cargo terminals</div> <div>Kiril Gulyabiyev</div> <div>Infrastructure of Interactive Provision of Cosmogeographical Data: New Perspectives for Geoinformation Systems</div> <div>Igor Menzhev</div> <div>MANAGEMENT OF LIQUIDITY RISKS IN THE BANKING SYSTEM</div> <div>Serino Aoudi</div> <div>Organizational Resilience in the Aerospace Industry: New Culture and Leadership Enable Recovery from Technological Disruptions and Global Crises</div> <div>Abdulkadir Akilov, Aykut Arslan</div> <div>Standards for Licensing Civil Aviation Flight Personnel in The Republic of Kazakhstan</div> <div>Bekov Seidakhmetov, Kayrat Zhakypov, Dmitry Kim, Oghlas Sakonov, Marina Skiba</div> <div>Risks And Scenarios of Transformation of Civil Aviation in Kazakhstan: Logistics and Transportation Management</div> <div>Bekov Seidakhmetov, Kayrat Zhakypov, Oghlas Sakonov, Dmitry Kim, Marina Skiba</div>	13:30 - 15:00	10th Technical Session	<div>Session Chair: Doston Mambetov</div> <div>Prospects for the application of artificial intelligence approaches in diagnostics and predictive maintenance of diesel generators</div> <div>Nurkhan Temptayev</div> <div>The Ethical and Societal Transformation: How Artificial Intelligence is Reshaping Human Life and Values</div> <div>Ilgaliy Aliev</div> <div>Towards Intelligent Defect Detection in Automated Fiber Placement through Edge Current Tracing and Machine Learning Integration</div> <div>Muradbek Mambetov</div> <div>Feature-Based GPS-Free Frame-to-Frame Forest Localization</div> <div>Sadik Mambetov, Yegorov Pashayev</div> <div>Analysis of the Impact of Meteorological Station Data on Energy Production in Solar Power Plants</div> <div>Pelmen Bayramov</div> <div>Qualitative Analysis of the Speed of Sound in Biopolymer Components Based on Experimental Data for Methyl Laurate and Methyl Stearate</div> <div>Laila Akhmedova-Azizova, Elmagom Imanov Abdullayev, Adalat Sattayev Samedov, Emil Nurman</div>
15:00 - 15:15	Coffee Break		15:00 - 15:15	Coffee Break		15:00 - 15:15	Coffee Break	
15:15 - 17:30	10th Technical Session	<div>Urban Air Mobility And Autonomous Air Vehicles</div> <div>Alvarado DURMAY</div> <div>Comparative analysis of high-speed optical signal processing methods</div> <div>Umid Jallilov, Ruzhan Alimov</div> <div>Mechanical Systems and Hull Design in UAV Integrated Unmanned Surface Vehicles</div> <div>Ernigul Bakir, Eray Erizel, Medine Celik, Tildayev Taldan</div> <div>Design and Implementation of an Autonomous UAV for Aerial Image Recognition and Communication with Unmanned Surface Vehicles</div> <div>Talib Qudusov, Abdulkarim Akman, Midrayev Taldan</div> <div>Power Delivery Communications Infrastructure and Electronic Design Optimizations in Unmanned Surface Vehicles</div> <div>Or Dogulman, Erhan Oskman, Midrayev Taldan</div> <div>Integrating Autonomous Navigation Perception and Vision Interplay in Modular Unmanned Surface Vehicle Systems for Object and Obstacle Detection</div> <div>Elif Nur Yildiz, Ufuk Serdar Polat, Akper Sal, Midrayev Taldan</div> <div>Technologies for obtaining materials based on additive manufacturing for the aviation industry</div> <div>Kilbek Khabayev</div>	15:15 - 17:30	10th Technical Session	<div>Innovative Development of the Air Navigation Complex of the Republic of Kazakhstan: Scientific and Technical Prospects and Technological Trends</div> <div>Aishan Zhigabayeva, Mural Amelov, Rihqul Muratov</div> <div>INNOVATIVE APPROACHES TO TRANSPORT MANAGEMENT IN THE CONTEXT OF DIGITAL TRANSFORMATION</div> <div>Muratas Ali-Zam</div> <div>Dynamic Obstacle Avoidance Algorithm-based Formation Tracking Control of a Group of UAVs</div> <div>Kaan CAN</div> <div>Visual Identification and Marking for Airfield Tractors</div> <div>Makhsudbek Basmagambetov</div> <div>Forecasting Metrics of Turboprop Engine by Machine Learning Algorithms Based on Real Flight Data</div> <div>Abdurrahman Fakir, Hakan Aydin</div> <div>A study of collection methods for electronic sensors using standard solutions using GPS, TDS and turbidity sensors as examples</div> <div>Alexander Oruzayev</div>	15:15 - 17:30	10th Technical Session	<div>Hybrid Electric Propulsion Systems: Architecture, Applications, and Environmental Impact on Aviation</div> <div>Aligbaev Jazov</div> <div>Synthetic Beams for Designing Intelligent Trainers for Firearm Shooting Training in the Context of Human-Machine Interaction</div> <div>Kamal Agayev, Farid Dadashev, Nargiz Nurgazina, Elmar Aabiev</div> <div>Numerical Investigation of Vortex Breakdown on Low-Sweep Delta Wings</div> <div>Bilal Yashpaga</div> <div>Digitalization of ramp inspection processes for civil aircraft in the Republic of Kazakhstan</div> <div>Vernik Dautbayev</div> <div>Distribution of Data Across Multiple Servers in a Distributed Big Data Environment and Investigation of the Causes of Increased Query Response Times</div> <div>Laila Shikhiyeva, Balant Ismagulov</div> <div>Testing the vertical strength of uniaxial beams by means of uniaxial compression</div> <div>Alibekov Tashir</div> <div>STUDY OF ELECTROCHEMICAL PROPERTIES OF ALUMINUM GRAZE AS ALLOYED WITH MAGNESIUM IN A MEDIUM OF ELECTROLYTE NaCl OF VARIOUS CONCENTRATIONS</div> <div>Selovur Arinbo</div>