7th International Symposium of Forest Engineering and Technologies – FETEC 2026

Digital Transformation in Forest Engineering 4.0 and Beyond: Artificial Intelligence and Information Systems Applications

12–14 October 2026 | Brașov, Romania

PROGRAM

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DAY 1 – MONDAY, OCTOBER 12, 2026		
08.00 – 09:00	**Registration**	
09:00 – 09:10	**Welcome Words** Moderator: Stelian Alexandru Borz Room: Main Room	Prof. Dr. Stelian Alexandru Borz, Director of the Forest Engineering, Forest Management Planning and Terrestrial Measurements Department, Faculty of Silviculture and Forest Engineering, Transilvania University of Brasov, Chair of the FETEC symposium
09:10 – 09:20		Prof. Dr. Alexandru Lucian Curtu, Dean of the Faculty of Silviculture and Forest Engineering, Transilvania University of Brasov
09:20 – 09:30		Prof. Dr. Selçuk Gümüş, Member of the FETEC Platform
09:30 – 09:40		Assoc. Prof. Dr. Ebru Bilici, Co-chair of the FETEC symposium, Representative of the IUFRO Division 3.01
09:40 – 10:00	**Coffee Break**	
10:00 – 10:20	**Plenary Session** Moderator: Stelian Alexandru Borz Room: Main Room	**Speaker:** Assoc. Prof. Dr. Kevin Boston **Affiliation:** Center for Forest Business, University of Arkansas, Monticello **Title:** *Issues in Forest Operations, and an Integrated View of Workforce Development*
10:20 – 10:40		**Speaker:** Prof. Dr. Mauricio Acuna **Affiliation:** Forest Research Institute, University of the Sunshine Coast, Australia **Title:** *Smarter Forest Operations: Uniting AI, Digital Twins and Human Expertise for Better Decisions Across the Value Chain*
10:40 – 11:00		**Speaker:** Assoc. Prof. Dr. Andrea Rosario Proto **Affiliation:** Department AGRARIA, University Mediterranea of Reggio Calabria **Title:** *Looking Ahead - FORMEC 2027, Reggio Calabria, Italy*
11:00 – 11:20	**Coffee Break**	
11:20 – 12:30	**Panel Session** Moderator: Zennure Uçar Room: Main Room	**Topic:** *Digital Transformation in Forest Engineering 4.0 and Beyond* Prof. Dr. Mauricio Acuna, Forest Research Institute, University of the Sunshine Coast, Australia Dr. Ciprian Muscă, ASFOR, Romania Prof. Dr. Sercan Gülci, Department of Forest Engineering, Kahramanmaras Sutcu Imam University
12:30 – 14:00	**Lunch Break**	
14:00 – 16:00	**Poster Session** Room: Poster Hall	
Title: Integrating Climate Change into Forest Road Network Planning through Climate-Adaptive Forest Management **Authors:** *Uzay Karahalil, Saliha Ünver, Hayrettin Küçükali* **Presenter:** *Uzay Karahalil – Türkiye*		

Title: Smart Urban Forests for Climate Resilience: The Role of Digital Technologies in Albania and Türkiye
Authors: *Ebru Bilici, Hajri Haska, Zennure Uçar*
Presenter: *Hajri Haska – Albania*

Title: From Site Constrains to Logging: A Spatial Suitability Model for Extraction Machinery Selection
Authors: *Aurora Bonaudo, Francesco Latterini, Rodolfo Picchio, Rachele Venanzi, Jennifer Kowalska, Mariusz Bembenek, Piotr Mederski, Stelian Alexandru Borz*
Presenter: *Stelian Alexandru Borz – Romania*

Title: Forwarding Performance: Insights from a Controlled Comparative Study
Authors: *Marina Viorela Marcu, Stelian Alexandru Borz*
Presenter: *Marina Viorela Marcu – Romania*

Title: Productivity of Mechanized Tree Gripping, Tree Felling, Log Loading and Unloading Under Simulated Environments
Authors: *Ana Alexandra Reyes Robalino, Stelian Alexandru Borz*
Presenter: *Ana Alexandra Reyes Robalino – Romania*

Title: Enhancing Working Posture Comparability in Forest Operations by the Use of Similarity Metrics
Authors: *Stelian Alexandru Borz, Eugen Iordache, Marina Viorela Marcu*
Presenter: *Eugen Iordache – Romania*

Title: Innovative Cable-Assisted Mechanized Harvesting Systems in the Pacific Northwest, USA
Authors: *Neşe Gülci, John Sessions*
Presenter: *Neşe Gülci – Türkiye*

Title: Documenting the Harvesting Conditions in Romanian Hybrid Poplar Plantations: A Study to Characterize Key Input Variables for Economic, Social and Environmental Assessment
Authors: *Mititelu Victor Bogdan*
Presenter: *Mititelu Victor Bogdan – Romania*

Title: A Close-Range Smartphone-Based LiDAR Dataset to Support Detection and Quantification of Residual Mechanical Damage to Standing Trees
Authors: *Ovidiu Todoran, Stelian Alexandru Borz*
Presenter: *Stelian Alexandru Borz – Romania*

19:00 – 21:00 Welcome Dinner

DAY 2 – TUESDAY, OCTOBER 13, 2026

09:30 – 10:30 | TECHNICAL SESSION #1

Digital Forestry, Digital Twins & Traceability Moderator: Stelian Alexandru Borz Room: Room A	**Environmental Monitoring, Climate Resilience** Moderator: Burak Arıcak Room: Room B
Title: The Digital Frontier of Forest Engineering and Ecosystem Management: A Multidimensional Review of Paradigm Shifts, Emerging Paradigms and Techno-Ecological Limitations (2020-2026) **Authors:** *Selçuk Gümüş, H. Hulusi Acar* **Presenter:** *Selçuk Gümüş – Türkiye*	**Title:** The Impact of Heavy Metal and Nanoparticle Pollution in Forests **Authors:** *Ramazan Erdem, Burak Arıcak, Hakan Sevik* **Presenter:** *Burak Arıcak – Türkiye*
Title: Blockchain Technology for Digital Traceability in the Wood Supply Chain **Authors:** *Andrea R. Proto, Salvatore F. Papandrea, Antonio Zumbo* **Presenter:** *Andrea R. Proto – Italy*	**Title:** Possible Effects of Global Climate Change on Türkiye's Forests **Authors:** *Hakan Sevik, Ramazan Erdem, Burak Arıcak* **Presenter:** *Hakan Sevik – Türkiye*
Title: Digital Traceability of Forest Products: Adapting the DigiMedFor Digital Workflow to Türkiye **Authors:** *Muhittin İnan, Mehmet Özdemir, Ramazan Akbulut, İbrahim Kaya, Muhammet Demir* **Presenter:** *Muhittin İnan – Türkiye*	**Title:** Gas Dispersion in Forest Environments: Threat Ranges of Typical Gases That Can Form as a Result of a Forest Fire **Authors:** *Tahsin Aykan Kepekli Hafiz Hulusi Acar, Tolga Barışık, Meryem İlayda Akar,* **Presenter:** *Tahsin Aykan Kepekli – Türkiye*
Title: A Proactive Agentic AI Strategy for Monitoring Forest Health and Climate Stress in a Forest Digital Twin: A Mediterranean Conceptual Case **Authors:** *Maria Intou, Anthony Karageorgos* **Presenter:** *Maria Intou – Greece*	**Title:** Information System-Based Monitoring and Assessment of $PM_{2.5}$, PM_{10}, and CO_2 During Forest Harvesting Operations **Authors:** *Ebru Bilici, Tolga Öztürk* **Presenter:** *Ebru Bilici – Türkiye*

10:30 – 11:00 Coffee Break

11:00 – 12:00 | TECHNICAL SESSION #2

Geographic Information Systems & Remote Sensing-I Moderator: Zennure Uçar Room: Room A	**Artificial Intelligence, Big Data & Decision Support** Moderator: Selçuk Gümüş Room: Room B
Title: Hotspot Analysis of the Spatial and Temporal Distribution of Forest Fires in the Mediterranean Region, Türkiye **Authors:** *Zennure Uçar, Ebru Bilici, Coşkun Okan Güney, Neşat Erkan* **Presenter:** *Zennure Uçar – Türkiye*	**Title:** ForestGPT: A Field-Oriented AI Companion for Forest Management Decision Support **Authors:** *Benno Eberhard, Natascia Magagnotti, Raffaele Spinelli* **Presenter:** *Benno Eberhard – Italy*
Title: Automated Counting of Eucalyptus saligna Seedlings at Different Establishment Stages Using Multispectral RPAS Imagery and Deep Learning	**Title:** Vision Transformers Versus CNN for Stem Damage Segmentation: A Case Study on Norway Spruce (Picea abies) Forests **Authors:** *Gabriel Osei Forkuo, Stelian Alexandru Borz*

Authors: *Fernando Coelho Eugenio, Roberta Aparecida Fantinel, Pablo Fernandes, Norton Borges Júnior* **Presenter:** *Fernando Coelho Eugenio – Brazil*	**Presenter:** *Gabriel Osei Forkuo – Romania*
Title: UAS to Overcome the Challenge of Managing Fragmented Forests **Authors:** *David Deveza, Catarina Aguiar, Bruna R.F. Oliveira* **Presenter:** *Bruna R.F. Oliveira – Portugal*	**Title:** Deep Learning Approaches for Plant Disease Detection and Intelligent AR Plant Care **Authors:** *Olesea Caftanatov, Atanas Hristov, Ali Hakan Işık, Inga Țițchiev, Eugeniu Plamadeala, Martino Rogai* **Presenter:** *Atanas Hristov – North Macedonia*
Title: A Standardized Protocol for Quantifying UASS Spray Deposition and Drift in Precision Forestry: Optimizing Field Sampling Layouts for Blanket Weed Management **Authors:** *Shankar Tripathi, Sam Van Holsbeeck, Brian Richardson, Andrew Howe* **Presenter:** *Shankar Tripathi – Australia, Nepal*	**Title:** RESAM2D: A Two-Dimensional Dynamic Model for Snow-Avalanche Simulation, with an Application to Bozdağ (İzmir, Türkiye) **Authors:** *Remzi Eker, Abdurrahim Aydın* **Presenter:** *Remzi Eker – Türkiye*
12:00 – 13:30 Lunch Break	
13:30 – 14:30 | TECHNICAL SESSION #3	
AI Applications & Smart Forestry Moderator: Piotr Mederski Room: Room A	**Intelligent & Digital Forest Road Systems** Moderator: Remzi Eker Room: Room B
Title: Digital Measurement of Urban Forest Carbon: A Comparison of a LiDAR-Embedded Application with a Traditional Method **Authors:** *Zennure Uçar, Ufuk Özkan, Ebru Bilici* **Presenter:** *Zennure Uçar – Türkiye*	**Title:** A Section-Based Deformation Severity Index for Forest Roads: Mobile GIS and UAV Deep-Learning Data Fusion with AutoML Deformation Susceptibility Modeling **Authors:** *Remzi Eker, Abdurrahim Aydın, Abdulğaffar Kaya, Yasin Karaşin* **Presenter:** *Remzi Eker – Türkiye*
Title: Urban Forestry Towards Forestry 4.0, an Analytical Overview at the State and Development Perspective **Authors:** *Hajri Haska, Selçuk Gümüş, Erisian Haska, Albana Jeminaj* **Presenter:** *Hajri Haska – Albania*	**Title:** GIS-Based Estimation of Critical Passing Speeds of Forest Fire Trucks on Horizontal Curves **Authors:** *İsmail K. Acembekiroğlu, Sercan Gülci, Hafız H. Acar* **Presenter:** *Sercan Gülci – Türkiye*
Title: Ethics in the Use of Artificial Intelligence Systems in Forestry: A Comparison of the UNESCO Recommendation on the Ethics of Artificial Intelligence and Türkiye's National Artificial Intelligence Strategy **Authors:** *İlknur Cesur, Çiğdem Özer Genç, Burak Arıcak* **Presenter:** *Burak Arıcak – Türkiye*	**Title:** Change Analysis of Forest Road Construction Area Using UAV Photogrammetry **Authors:** *Sümeyye Namal, Hakan Durgun, Mehmet Eker, Hafiz Hulusi Acar* **Presenter:** *Hafiz Hulusi Acar – Türkiye*
Title: A Bibliometric Analysis and Technology Assessment of Augmented Reality Solutions for Digital Forestry **Authors:** *Olesea Caftanatov, Atanas Hristov, Ali Hakan Işık, Mihail Cuznețov, Dmitrii Vanghelii, Martino Rogai*	**Title:** Comparative Assessment of Machinery-Related Risks in Forest Operations Using FMEA and Fine-Kinney Methods Through Min–Max Normalization **Authors:** *H. Hulusi Acar, Tolga Barışık, Yılmaz Çolak*

Presenter: *Olesea Caftanatov – Republic of Moldova*	**Presenter:** *H. Hulusi Acar – Türkiye*
14:30 – 15:00 Coffee Break	
15:00 – 16:00 | TECHNICAL SESSION #4	
Geographic Information Systems & Remote Sensing-II Moderator: Kevin Boston Room: Room A	**Forest Operations, Machinery & Forest Road Applications** Moderator: Neşe Gülci Room: Room B
Title: Deep Learning-Based Computer Vision in Forest Monitoring and Management: A Systematic Review **Authors:** *Gabriel Osei Forkuo, Stelian Alexandru Borz* **Presenter:** *Gabriel Osei Forkuo – Romania*	**Title:** Productivity Analysis of a Log Truck Loading Operation by Forwarder **Authors:** *Neşe Gülci, John Sessions* **Presenter:** *Neşe Gülci – Türkiye*
Title: FIS4GIS: An Interactive Desktop Fuzzy Inference System for GIS-Based Multi-Criteria Raster Analysis with Mamdani and Sugeno Modelling **Authors:** *Remzi Eker, Kamber Can Alkış, Abdurrahim Aydın, Ahmet Açıl* **Presenter:** *Remzi Eker – Türkiye*	**Title:** Linking Environmental Constraints to Timber Extraction Systems: A Spatial Decision-Support Approach **Authors:** *Aurora Bonaudo, Francesco Latterini, Rodolfo Picchio, Rachele Venanzi, Jennifer Kowalska, Mariusz Bembenek, Piotr Mederski* **Presenter:** *Piotr Mederski – Poland*
Title: Assessment of Operator Blind Spots in Tractors Using Low-Cost Mobile LiDAR Technology **Authors:** *Ebru Bilici, Saliha Ünver, H. Hulusi Acar* **Presenter:** *Ebru Bilici – Türkiye*	**Title:** Assessment of Cable Tensile Forces in the Harvester Winch Assist System **Authors:** *Andrea R. Proto, Salvatore F. Papandrea, Stanimir Stoilov, Georgi Angelov, Antonio Zumbo* **Presenter:** *Salvatore F. Papandrea– Italy*
Title: Multi-Scale Remote Sensing Calibration Protocols for Forest Ecosystem Monitoring **Authors:** *Bruna R.F. Oliveira* **Presenter:** *Bruna R.F. Oliveira – Portugal*	**Title:** Green Cities for Better Health: Exploring the Relationship Between Environmental Quality and Citizens Quality of Life **Authors:** *Hajri Haska, Olsi Miraçi, Eneida Haska, Neki Frasheri, Arjan Çukaj, Daniel Pirushi, Enver Roshi, Adelajda Halili* **Presenter:** *Hajri Haska – Albania*
16:00 – 16:30 Coffee Break	
16:30 – 17:20 | TECHNICAL SESSION #5	
Human-Centered Forestry, Ergonomics & Education Moderator: Hajri Haska Room: Room A	**Forest Economics, Carbon & Forest Management** Moderator: Ebru Bilici Room: Room B
Title: Ergonomic Risk Assessment of Wildfire Suppression Equipment Using a Multi-Criteria Decision-Making Approach **Authors:** *H. Hulusi Acar, Tolga Barışık* **Presenter:** *H. Hulusi Acar – Türkiye*	**Title:** An Integrated Remote Sensing Framework for Estimating Individual Tree Attributes Using LiDAR-Derived Canopy Height Models and Orthophotos **Authors:** *Uzay Karahalil, Saliha Ünver, Hayrettin Küçükali* **Presenter:** *Uzay Karahalil – Türkiye*

	Title: Contemporary Methodologies and Techniques in the Study, Implementation and Optimization of Urban Forestry in Urban Area **Authors:** *Hajri Haska, Selçuk Gümüş, Ebru Bilici, Eneida Haska* **Presenter:** *Hajri Haska – Albania*	**Title:** ML and DL-Models for the Forestry Infrastructural Projects **Authors:** *Ekaterina Podolskaia, Anna Sinitsina* **Presenter:** *Ekaterina Podolskaia – Russia*
	Title: Forest 4.0 as a Data-Driven Innovation Platform **Authors:** *Arianit Kurti* **Presenter:** *Arianit Kurti – Albania*	**Title:** Building New Products Development Opportunities from Hazardous Fuels **Authors:** *Dalia Abbas Iossifov* **Presenter:** *Dalia Abbas Iossifov – USA*
	Title: Workforce Development in Arkansas, USA a Collaborative Approach with the Logging Workforce and University **Authors:** *Kevin Boston, Matt Pelkki* **Presenter:** *Kevin Boston – USA*	**Title:** Bearing Capacity and Trafficability of Forest Roads During Harvesting: A Case Study of Sao Hill Forest Plantation, Tanzania **Authors:** *Japhet S. Japhet, Sami D. Madundo, Scolastica J. Ntalikwa, Dunstan T. Shemwetta, Ernest W. Mauya, Nicodem N. Mwauponde, William S. Mduma, Tulloh Y. Zahabu* **Presenter:** *Japhet S. Japhet – Tanzania*
		Title: Forest Operations: A Tool for Forest Management **Authors:** *Han Sup Han* **Presenter:** *Han Sup Han – USA*
17:20 – 17:50	**Closing Session** Session Chair: Stelian Alexandru Borz Room: Main Hall Award for Young Researchers in Memoriam of Prof. Abdullah Emin Akay – Ebru Bilici Closing Words – Stelian Alexandru Borz	

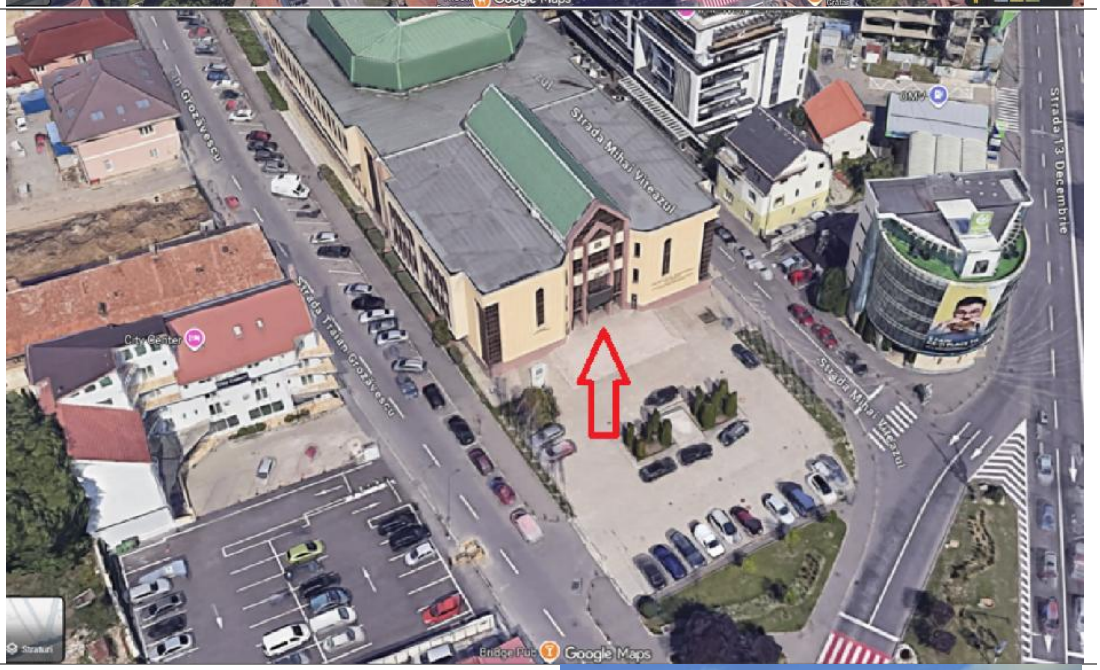
DAY 3 – WEDNESDAY, OCTOBER 14, 2026	
08:30 – 09:00	Field trip registration
09:00 – 10:30	Bus transfer from Brasov to the field site
10:30 – 13:00	Harvesting systems at work, discussion
13:00 – 14:30	Lunch break
14:30 – 16:00	Bus transfer from the field site to Brasov

SYMPOSIUM VENUE

Google Maps Link

SALA DE CONCERTE - AULA - UNIVERSITATII TRANSILVANIA BRASOV

SCAN ME FOR GOOGLE MAP LOCATION



Note: Coffee and lunch breaks will be organized in the venue's hall

WELCOME DINNER

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FIELD TRIP REGISTRATION

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