IEEE TACLE 2025

Workshop on **Trustworthy and Efficient Computing and Networking for Low-Altitude Economy Systems**

In conjunction with IEEE TrustCom 2025

Call for paper

The rapid emergence of the low-altitude economy — driven by innovations in unmanned aerial vehicles (UAVs), urban air mobility (UAM), aerial logistics, low-altitude remote sensing, and air-ground integrated infrastructure — is reshaping the landscape of smart cities, intelligent transportation, and digital infrastructure. These new paradigms are creating highly dynamic, distributed, and resource-constrained environments, requiring advanced computing and networking technologies to enable intelligent, autonomous, and mission-critical services in the close-to-the ground airspace.

In these systems, computing and networking are deeply interwoven: real-time data from onboard sensors, environmental perception, mission control, and inter-aircraft collaboration must be processed and exchanged efficiently, often across heterogeneous platforms with limited power, communication, and compute capacity. Traditional centralized computing and terrestrial networks are insufficient for such dynamic aerial environments, necessitating novel solutions in 6G and beyond communication technologies, edge computing, aerial mesh networks, distributed intelligence, and air-ground orchestration. At the same time, trustworthiness — including aspects such as system reliability, data integrity, privacy preservation, secure coordination, and decision explainability — is critical. Low-altitude systems often operate in safety-critical and highly mobile scenarios, such as aerial emergency response, infrastructure inspection, or urban traffic management, where the cost of error is high and system coordination must be verifiable and dependable.

This workshop, TACLE 2025, seeks to bring together researchers, engineers, and practitioners to explore and present innovations at the intersection of trustworthy and efficient computing and networking for low-altitude economy systems. We welcome both theoretical contributions and practical systems, as well as visionary proposals that push the frontier of aerial intelligent systems.

Topics of interest include, but are not limited to:

Trustworthiness and Reliability in Low-Altitude Economy Systems

- Trust management in dynamic aerial-ground environments
- Lightweight security protocols and authentication for UAVs
- Data integrity, fault tolerance, and resilience in distributed systems
- Privacy-preserving collaborative computation and communication
- Safety-aware system design for aerial infrastructure
- Human factors and human-centric studies for low-altitude economy
- Trustworthy and Reliable Intelligence
- Emerging technologies in low-altitude economy systems

Efficient Computing in Low-Altitude Economy Systems

- Algorithm frameworks improving efficiency of low-altitude economy systems
- Edge and fog computing for aerial and mobile systems
- Distributed AI/ML inference and training across UAVs and ground nodes
- Real-time computing for autonomous flight and coordination
- Energy-efficient computation under SWaP (Size, Weight, and Power) constraints
- Task offloading, scheduling, and orchestration in aerial-ground systems
- AI enabled efficient computing for low-altitude economy

- Emerging computing

Communication and Networking in Low-Altitude Economy Systems

- Air-to-air and air-to-ground wireless communication
- UAV ad hoc and mesh networking
- Integrated sensing, communication, and computing (ISCC)
- Low-latency and high-reliability networking for mission-critical tasks
- Network slicing and quality-of-service in aerial 6G and beyond systems
- Semantic and secured communication technologies
- AI enabled communication and networking for low-altitude economy
- Emerging communication and networking technologies for low-altitude economy

Important Dates

- **Paper submission deadline: 1 August, 2025**
- **Author notification: 5 October, 2025**
- **Final manuscript due: 20 October, 2025**
- **Registration due: in accordance with TrustCom 2025**

Submission Instructions

All papers need to be submitted electronically through the conference submission website https://edas.info/N34058 with PDF format. The conference applies single-blind peer review. The materials presented in the papers should not be published or under submission elsewhere. The length of thepapers should not exceed 6 pages + up to 2 pages for overlength charges (IEEE Computer Society Proceedings Manuscripts style: two columns, single-spaced, 10-point font), includingfigures and references.

Manuscript Templates for Conference Proceedings can be found at: https://www.ieee.org/conferences_events/conferences/publishing/templates.html .Once accepted, at least one of the authors of any accepted paper is requested to register the paper at the conference.

PC Members

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