<p style="color:red; text-align:center">Special Session on</p>

"Distributed Optimization and Control for Intelligent Networked Transportation System"

Session Organizers:

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Session Description: With the accelerated development of intelligent technologies and the significant progress for state-of-the-art communication technologies, modern transportation systems across maritime, terrestrial, and aerial domains are increasingly exhibiting characteristics of multi-network integration and advanced intelligence. To more effectively adapt to this development trend, distributed optimization and control methodologies are being extensively deployed in modern intelligent networked transportation systems (INTSs).

In contrast to the decision making and control methods for the traditional centralized optimization, the distributed network framework offers several salient advantages: reliability and fault tolerance, scalability, resource sharing, robustness for failure-against single points etc. Nonetheless, it confronts several pressing challenges necessitating resolution simultaneously: the design and security of self-organizing communication networks, the coordinated control for nonlinear MASs (multi-agent systems), distributed optimization under multi-constraint conditions, as well as the optimization and dispatching for the distributed energy and computational systems etc. As a result, we strongly hope to propose an invited session for ICIST 2024 entitled 'Distributed Optimization and Control for Intelligent Networked Transportation System'. This special session is aiming to provide an opportunity for the researchers and practitioners in the field of distributed optimization, intelligent networked transportation systems, fault tolerance and security for MASs, energy optimization/dispatching, and distributed coordinated control to share their new ideas and recent results. The topics of this session explicitly include but are not limited to the following aspects:

- Framework for distributed INTSs;
- Energy optimization and dispatching strategies for distributed INTSs;
- Computational power optimization in distributed INTSs;
- Technologies for fault tolerance and security in INTSs;
- Cooperative control and optimization theory for nonlinear MASs;
- Machine learning and its application to distributed INTSs;
- Theory for distributed optimization with constraints;
- Mobile communication network topology design and optimization strategies;
- Framework and applications of integrated distributed IoT (Internet of things) and information networks;
- Other relative distributed frameworks, methods, and applications about INTSs.