The 24th IEEE International Conference on Trust, Security and Privacy in Computing and Communications (TrustCom 2025)

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Call for Workshop Papers on Secure Spectrum Sharing and Management in 6G Terahertz Networks (S3MAT)

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IMPORTANT DATES

Paper Submission Deadline:

August 1st, 2025

Author Notification:

October 1st, 2025

Final Manuscript Due:

October 15th, 2025

PAPER SUBMISSION

The terahertz (THz) band is pivotal for 6G networks, offering ultra-wide bandwidths that enable multi-gigabit data rates and support emerging applications like holographic communication and autonomous vehicle networking. Its directional signals allow for enhanced spatial reuse, crucial for dense urban deployments. As 6G aims to connect a vast array of devices, the THz spectrum provides the capacity needed to handle soaring data traffic, positioning itself as a cornerstone of future connectivity.

However, deploying THz networks in 6G presents significant hurdles. The band's severe propagation losses and environmental sensitivity limit signal range, requiring dense node setups and dynamic spectrum management. With much of the THz spectrum unlicensed, competition for resources intensifies, risking interference among users. Moreover, the high-speed data processing demands of THz communications outpace traditional security measures, exposing networks to eavesdropping, jamming, and unauthorized access. Addressing these challenges requires integrated solutions for secure and efficient spectrum sharing, an area that current research has yet to fully explore.

This workshop focuses on Secure Spectrum Sharing and Management in 6G Terahertz Networks (S3MAT). By facilitating in-depth discussions, knowledge exchange, and collaborative problem-solving, the workshop seeks to identify innovative approaches for secure spectrum access, develop robust security frameworks, and explore strategies for balancing security requirements.

Topics of interest for this workshop, include, but are not limited to:

- Blockchain-based secure spectrum allocation protocols for 6G terahertz networks
- Physical-layer security techniques for mitigating eavesdropping in 6G terahertz spectrum sharing
- Al-driven dynamic spectrum access with anomaly detection in 6G terahertz environments
- Secure federated learning for spectrum management in distributed 6G terahertz networks
- Trusted spectrum sharing frameworks for heterogeneous devices in 6G terahertz ecosystems
- RIS-enabled secure beamforming for spectrum-efficient 6G terahertz communications
- Privacy-preserving spectrum sensing methods for 6G terahertz wireless systems
- Resilient security architectures against jamming in 6G terahertz spectrum sharing
- Cross-layer security optimization for spectrum-aware 6G terahertz applications
- Lightweight cryptographic schemes for real-time spectrum protection in 6G terahertz networks
- Secure spectrum trading mechanisms with incentive design in 6G terahertz marketplaces
- Zero-trust architecture for secure spectrum access in 6G terahertz heterogeneous networks

Papers submitted to IEEE S3MAT 2025 should be written in English conforming to the IEEE Conference Proceedings Format (8.5"×11", Two-Column). The paper should be submitted through the EDAS (https://edas.info/N34123). The length of the papers should not exceed 6 pages+2 pages for over length charges. Accepted and presented papers will be included into the IEEE Conference Proceedings published by IEEE CS CPS and submitted to IEEE Xplore. Authors of accepted papers, or at least one of them, are requested to register and present their work at the conference, otherwise their papers will be removed from the digital libraries of IEEE CS after the conference. Distinguished papers presented at the conference, after further revision, will be recommended to special issues of reputable SCI/EI indexed journals. Submitting a paper to the workshop means that, if the paper is accepted, at least one author should attend the Symposium and present the paper.