IEEE WIFS 2025

17th IEEE INTERNATIONAL WORKSHOP ON INFORMATION FORENSICS & SECURITY

PERTH, WA, AUSTRALIA · 1st - 4th DECEMBER 2025

Special Session: Achieving Trustworthiness over Wireless Medium

CALL FOR PAPER

The desired trustworthiness in sixth-generation (6G) networks must be extended to its radio access or wireless medium, as 6G is to control mobile or even flying objectives (e.g., drones). In addition, with the recent advances in circuits, antennas, and AI techniques, intelligent radio (IR) is extending from intelligent spectrum access to providing intelligence in numerous physical layer techniques, e.g., channel modelling, channel estimation, modulation, channel coding, beamforming, resource allocation. This leads to more vulnerabilities in IR of 6G and also offers new opportunities to address 6G trustworthiness over its IR, e.g., smart beam focusing to avoid information leakage. Furthermore, due to the limitations of traditional cryptographic methods, the achieved trustworthiness by them is far from sufficient in many usage scenarios of 6G. These limitations, together with the opportunities offered by the newly introduced sensing function and AI, motivate us to seek complementary techniques to provide compensate trustworthiness for 6G networks over the wireless radio on physical layer. For example, the sensing function and AI can be exploited to collect information on the communication surroundings to significantly facilitate guaranteeing trustworthiness by physical layer solutions, which aligns well with the concept of context-aware security for 6G wireless.

The technologies that can be used to achieve trustworthiness on wireless physical layer include but not limited to: covert communications, physical layer security, key generation, and wireless authentication. We briefly highlight the key targets of these wireless technologies. For example, the key aim of covert communications is to hide wireless transmission to ensure confidentiality, but it can also be exploited to avoid jamming attacks to guarantee availability. The observation of recent surge in these wireless physical layer technologies and the emergence of many exciting opportunities motivate us to propose the timely and promising special session of "Achieving Trustworthiness over Wireless Medium" on IEEE WIFS 2025. Thereby, we seek to bring together researchers from academia and industry to introduce to the signal processing and communications community the latest advances in these techniques used to achieve trustworthiness over the wireless medium for 6G networks and point to readers many promising research opportunities. An outline of topics on which we plan to solicit submissions is as follows:

- Signal processing for achieving wireless trustworthiness
- Covert wireless communications
- Low probability of detection communications
- Advanced signal processing for physical layer security
- Efficient key generation over wireless channels
- Intelligent authentication using radio frequency (RF) fingerprints
- Definition of trustworthiness over wireless interfaces of 6G networks
- Sensing-aided covert communication
- Physical layer security in integrated sensing and communications
- Explainable AI for trustworthiness over wireless interface
- Trustworthy federated machine learning
- Artificial intelligence aided signal processing
- Trustworthy radio access with emerging wireless techniques
- Real-world prototypes and testbeds for trustworthy wireless systems
- Satellite communication security
- Drone communication security

Submission deadline: July 15, 2025. << Click Here to Find the Submission Website >> [1]
Prospective authors are invited to submit research papers be up to 6 double-column pages << Click Here to Find the Template >>, including references and figures, presenting original works and addressing Information Forensics and Security aspects in a broad sense. **The top ranked 5 IEEE WIFS 2025 papers will be recommended to IEEE Open Journal of Signal Processing (OJSP) as an extended version following the requirements of Signal Processing Society (SPS) for the extension of conference papers to journals [2]. The Open Access Article Processing Charges will be waived for the manuscripts that are accepted for publication.**

[1] Please select "Achieving Trustworthiness over Wireless Medium" as the Subject Area.
[2] For more information, please refer to << click here>>

IMPORTANT DATES

Paper/Demo Submission Deadline	July 31, 2025
Acceptance Notification	September 15, 2025
Camera-ready Submission	September 30, 2025
Early Registration Close	October 4, 2025
Workshop Dates	December 1 – December 4, 2025

SESSION CHAIR

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