

CALL FOR PAPERS

IEEE Journal of Selected Areas in Sensors Special Section on

**Safeguarding the Sensor-Integrated Digital Twin (SIDT): Elevating 6G Networks
with Privacy and Reliability**

The theme of this special issue on 6G-enabled Sensor-Integrated Digital Twin (SIDT) research is justified by its revolutionary impact on intelligent applications within wireless networks. The integration of intelligent sensors with the Digital Twin framework enhances real-time data collection, analysis, and interpretation, contributing to improved operational efficiency and decision-making. Leveraging Ultra-Reliable and Low Latency Communications (URLLC) facilitates swift transmission of critical information, ensuring minimal latency and high reliability in various industries. However, realizing the full potential of SIDT presents challenges, particularly in privacy and security aspects, necessitating dedicated research to establish a secure SIDT framework. This special issue aims to address these challenges, fostering advances in SIDT research, innovation, and applications in 6G-enabled intelligent sensor-centric networks.

It is intended that this Special Section of IEEE Journal of Selected Areas in Sensors (JSAS) will show the state-of-the-art in SIDT. Original research contributions, tutorials and review papers are sought in SIDT related areas including (but not limited to):

- Novel SIDT Architecture, Protocols, Open Interfaces, and Standard for 6G Networks
- AI and Deep learning/Federated learning-based privacy preserving solutions in 6G-enabled SIDT
- Security and privacy for 6G-enabled SIDT
- SIDT for resource management and network optimization in 6G
- Energy-efficient and low-latency solutions in 6G-enabled SIDT
- Scalable, lightweight, and fault-tolerant solutions for 6G-enabled SIDT
- Standardization for the integration of URLLC and SIDT
- Security and privacy attacks detection and prevention mechanisms in 6G-enabled SIDT
- AI/ML-based privacy-preserving anomaly detection and prevention in 6G-enabled SIDT
- Emerging cloud and Fog/Edge aspects of 6G-enabled SIDT
- Blockchain and DLT-enabled zero-trust protocols for 6G-enabled SIDT
- Metaverse/Web 3.0-based sensor-centric privacy-preserving solutions in 6G-enabled SIDT
- Simulations, prototype, and testbeds for 6G-enabled SIDT

Solicited and invited papers shall undergo the standard IEEE Journal of Selected Areas in Sensors (JSAS) peer review process. All manuscripts must be submitted on-line, via the IEEE Author Portal, see <https://iee.atyponrex.com/journal/jsas>. When submitting, please indicate in the “Manuscript Type” roll down menu that the paper is intended for the “Safeguarding the Sensor-Integrated Digital Twin (SIDT): Elevating 6G Networks with Privacy and Reliability” Special Section. Authors are particularly encouraged to **suggest names of potential reviewers** for their manuscripts in the space provided for these recommendations in *Manuscript Central*. For manuscript preparation and submission, please follow the guidelines in the *Information for Authors* at IEEE Journal of Selected Areas in Sensors web page,

<https://iee-jsas.org/>

Deadlines:

- Manuscript Submission: Oct 15th, 2024
- Completion of First Review: Nov 30th, 2024
- Notification of Acceptance: Dec 20th, 2024
- Publication: Dec 31st, 2024

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