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## CALL FOR PAPERS

### IEEE Internet of Things Journal

#### Special Issue on Embodied Active Sensing and Environment-Aware IoT Systems in 6G

6G IoT systems demand environment-aware operation beyond traditional communication-centric design. Embodied active sensing unifies passive observation, active probing, and bidirectional communication under a coherent observability framework, treating communication infrastructure as observable environment components. This Special Section aims to bring together advances in active sensing, reconfigurable hardware, near-field electromagnetics, and observation engineering, enabling IoT systems to actively generate informative observations and construct reliable representations of their electromagnetic environment.

#### Topics of interest include, but not limited to:

##### *Layer 1: Information Generation by Active EM Interaction*

- Physics-constrained observation models; Active probing strategies
- Reconfigurable and movable antenna systems; Hybrid-field sensing

##### *Layer 2: Embodied Adaptation Under IoT Constraints*

- Energy-efficient sensing; Trajectory-driven observation design
- Joint sensing–communication–control; Robust sensing under blockage

##### *Layer 3: Environment Inference and Representation Consistency*

- Environment representations; Adaptive observation planning
- Information-theoretic sensing optimization; Bayesian inference

##### *Layer 4: System Integration and IoT Applications*

- Persistent world modeling; Digital twins for IoT
- Context-aware communication; Applications in smart homes, industrial IoT, and remote healthcare

#### Important Dates:

- Submissions Deadline: January 31st, 2027
- First Reviews Due: March 15th, 2027
- Revision Due: April 15th, 2027
- Second Reviews/Notification: May 31st, 2027
- Acceptance Notification: July 15th, 2027
- Final Manuscript Due: July 31st, 2027
- Publication Date: September 2027

#### Submission Guidelines:

The original manuscripts to be submitted need to follow the guidelines at: <https://ieeiotj.org/wp-content/uploads/2025/02/IEEE-IoTJ-Author-Guidelines.pdf>, which should not be concurrently submitted for publication in other venues. Authors should submit their manuscripts through the IEEE Author Portal at: <https://ieee.atyponrex.com/journal/iot>. The authors must select as “Special Issue on **Embodied Active Sensing and Environment-Aware IoT Systems in 6G**” when they reach the “Article Type” step in the submission process

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