

**Call for Papers - ACM Transactions on Internet Technology - a Special Issue on
Evolution of IoT Networking Architectures**

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Important Deadlines

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- First decisions: 15.10.2019
- Revisions: 30.11.2019
- Final decisions: 31.01.2020
- Final (Camera-ready): 30.02.2020
- Publication date: 05.2020

Submission Instructions

Refer to
<http://toit.acm.org/submission.html>

Please select "Special Issue on Evolution of IoT Networking Architectures" in the TOIT Manuscript Central Website

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To support the sheer number of entities connecting to the *Internet of Things (IoT)*, emerging IoT networks must support the stewardship of large amounts of data, in-network and in-flight computation/AI, distributed storage, and rich queries. While today's IoT uses standard IP-based messaging, its shortcomings have led to proposed extensions for constrained environment operation, publish-subscribe middleware, data-centric routing, among other technologies. This special issue aims to present the most leading-edge research on:

- **Next-generation IoT network architecture & protocols**, including improved support for QoS/QoE, increased mobility, streaming media, and integrated security; a path from client/server centralized models to a fully distributed comms architecture; edge data producer disruption.
- **Cross-layer design**, enabling real-time & near-real-time data delivery and synchronization; support for efficient multi-party communication; collective behaviors (e.g., crowd sensing, crowdsourcing, resource federation); impacting low-power design; the wireless & mobile edge.
- **Novel approaches to Edge networking for IoT**, such as distribution & orchestration of network functions to best support data processing and aggregation; seamless interoperation of static and mobile edge infrastructure & devices; resilience and dynamic adaptation; data caching and migration; autonomous operation vs opportunistic connectivity; the proliferation and peering of "edges".
- **IoT communication interoperability**, such as proposals to articulate in a distributed and self-organizing way communication between different communication protocols; support for a large variety of heterogeneous and constrained devices; discovery & directory services
- **Network measurement & performance**, to assist in understanding, exposing and comparing the performance of current IoT resources, infrastructure and protocols in a variety of scenarios, including industrial & consumer IoT.
- **IoT Privacy, security and trust challenges**, including data security, user privacy, distributed trust models, attestation, privacy- and policy-preservation, encrypted search, access control and policy management.