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## Autonomous Networks: Opportunities, Challenges, and Applications

Publication Date

**June 2022**

Manuscript Submission  
Deadline

**31 January 2022**

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Special Issue

### Call for Papers

The network management automation problem in 5G systems has been gaining attention from both the standardization organizations and researchers. The current age of agile and dynamic cloud-based environment demands autonomous systems for managing network resources. The goal of operators is to optimize the network resources in order to achieve minimalism with efficiency. The autonomosity in networks is the next leap of evolution that is capable of going beyond automation capabilities. With autonomosity, it is not just making the network capable of managing resources, but rather making the network learn and adapt itself with respect to the dynamic environment. In networks,

the autonomous tasks refer to self-healing, self-diagnosing, and self-provisioning. With the help of emerging technologies such as artificial intelligence (AI), Internet of Things (IoT), and Blockchain, autonomous tasks can be realized in current network systems. We aim to bring together academic researchers, industrial practitioners, and individuals working in this emerging exciting research area to share their innovative ideas and latest findings, and identify and discuss potential use cases, open research problems, technical challenges, and solution methods in the context of **standardization**. This Special Issue (SI) is targeted at the above issues related to Autonomous Networks: QoS Provision and Resource Management. Authors are invited to submit previously unpublished papers to this Special Issue. Topics include, but are not limited to:

- ML/DL for Autonomous Networks
- SDN/Network Slicing for Autonomous Networks
- Blockchain for Autonomous Networks
- Edge Computing for Autonomous Networks
- Big Data Analytics for Autonomous Networks
- Federated Learning for Autonomous Networks
- IoT for Autonomous Networks
- Dynamic Resource Allocation Techniques
- Quantum Computing for Autonomous Networks
- Decentralized AI for Autonomous Networks
- Autonomous Network architectures and protocol designs
- Quality of Service (QoS) issues such as Dynamic Resource Allocation, Spectrum Allocation, Energy Efficiency
- Enabling Trust for Autonomous Networks
- Futuristic paradigms for advanced use cases; adopting blockchain, quantum communication etc

- Parameters like interoperability, heterogeneity, and bandwidth in congested networks
- Optimization Techniques (e.g. Haris Hawk) for Autonomous Networks

## Submission Guidelines

Manuscripts should conform to the standard format as indicated in the Information for Authors section of the [Paper Submission Guidelines](#). All manuscripts to be considered for publication must be submitted by the deadline through [Manuscript Central](#). Select “June 2022/Autonomous Networks: Opportunities, Challenges, and Applications” from the drop-down menu of Topic/Series titles.

## Important Dates

**Manuscript Submission Deadline:** ~~1 December 2021~~ 31 January 2022  
(Extended Deadline)

**First Decision:** 1 March 2022

**First Revision Submission Deadline:** 1 April 2022

**Decision Notification:** 1 May 2022

**Final Manuscript Due:** 15 May 2022

Publication Date: June 2022

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