

**Special Thematic Issue for the journal International Journal of Sensors, Wireless Communications and Control**

**Intelligent Wireless Emergency Communications Networks: System Architecture & Applications**  
*Executive Guest Editor: Manju Khari*

- **Scope of the Thematic Issue:**

A competent wireless emergency communications network can provide essential information and notice to persons regardless of their location. It assists in responding to, recovering from, and mitigating possible injury. However, accomplishing such goals is very difficult since wireless communications networks often fail to handle critical broadband data transmission and become readily overwhelmed during catastrophes. Despite widespread usage of contemporary technology such as smartphones and laptops, there is no assurance that emergency alerts reach end consumers. It is crucial to examine the essential parts of intelligent network communication devices while developing a wireless emergency communications infrastructure. Every second counts in critical situations, and it's necessary to respond quickly and efficiently in an optimum way. And this is precisely where the function of AI technology in wireless emergency communications infrastructure arises.

The upcoming 5G wireless networks are designed to ensure that diverse modern wireless applications may be delivered reliably and quickly in any location, anywhere at the moment, but in any manner. Currently, 5G wireless networks are advancing fast and are predicted to be widely implemented around upcoming years. However, with a well-developed backbone, wireless communication has a long road ahead to go before achieving the aim of connecting at any time and from any location. For instance, after an unanticipated calamity, such as an earthquake or a flood, the existing communication network may be rendered inoperable or severely damaged and exhausted. In these scenarios, real-time communication systems are necessary to re-establish the connection and enable the user and the emergency responders in disaster locations.

Many countries have begun their research proposals on emergency preparedness after understanding the significance of communication systems in post-disaster or incredibly hazardous circumstances. These proposals contain a combination of specific wireless technologies, like terrestrially spatial network systems, post-earthquake connections, and UVA assisted networks. Based on this relevant research, many industrial and academic experts are putting considerable effort into inventing optimal architectures and deploying them inside various emergency alert circumstances.

Network management, RPA, digital assistant, and maintenance scheduling are significant AI tasks in wireless emergency communications. Despite commoditizing physical and data transmission architectures, machine learning and deep learning approaches offer edge optimization of wireless networks. It enhances multichannel, bandwidth, and antennae sensitive assessment. Moreover, wireless emergency communications network automation and intelligence would improve root cause investigation and forecasting of network difficulties and progressively assist in managing, optimizing, and maintaining communications architecture and end-end support operations.

**Sub-topics:**

The sub-topics to be covered within the issue should be provided:

- Enhanced Architecture framework for Satellite and terrestrial Intelligent Wireless Emergency Communications Networks
- Distributed edge computing for disaster and catastrophe management using Wireless

## Emergency Communications Networks

- AI-enabled data-driven functional architecture using Wireless Emergency Communications Networks
- Resource allocation and performance analysis in Intelligent Wireless Emergency Communications Networks
- Robust low-latency wireless emergency networks
- Network planning and medium access control (MAC) protocols for Intelligent Wireless Emergency Communications Networks
- UAV assisted Intelligent Wireless Emergency Communications Networks
- Blockchain-based privacy enhancement in Intelligent Wireless Emergency Communications Networks
- Heterogeneous networks optimization for Intelligent Wireless Emergency Communications Networks
- Network function virtualization and software Defined Network in Intelligent Wireless Emergency Communications Networks.

### **Tentative titles of the articles:**

1. Network planning and medium access control (MAC) protocols for Intelligent Wireless Emergency Communications Networks.
2. Blockchain-based privacy enhancement in Intelligent Wireless Emergency Communications Networks
3. Enhanced Architecture framework for Satellite and terrestrial Intelligent Wireless Emergency Communications Networks.
4. Network function virtualization and software Defined Network in Intelligent Wireless Emergency Communications Networks.
5. Resource allocation and performance analysis in Intelligent Wireless Emergency Communications Networks.
6. Distributed edge computing for disaster and catastrophe management using Wireless Emergency Communications Networks.
7. Heterogeneous networks optimization for Intelligent Wireless Emergency Communications Networks.
8. Trends in Robust low-latency wireless emergency networks Frontiers in UAV assisted Intelligent Wireless Emergency Communications Networks.
9. AI-enabled data-driven functional architecture using Wireless Emergency Communications Networks.

### **Schedule:**

#### Deadline for submissions

- The deadline for manuscript submissions will be 9 May 2022.
- The expected publication date (tentatively) will be November 2022.

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