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(51) International classification	:H04L 126600, H04N 214820, H04W 047000, H04W 720400, H04W 721200	(71) Name of Applicant : 1)CVR COLLEGE OF ENGINEERING Address of Applicant :Vastunagar, Mangalpally(V), Ibrahimpatnam (M) Hyderabad ----- Name of Applicant : NA Address of Applicant : NA (72)Name of Inventor : 1)DR. S. PRAVEEN CHAKKRAVARTHY Address of Applicant :Department of Electronics and Communication Engineering, CVR College of Engineering, Vastunagar, Mangalpalli (V), Ibrahimpatnam (M) 501510 Hyderabad ----- 2)PATEEL YASHWANTH KUMAR REDDY Address of Applicant :Department of Electronics and Communication Engineering, CVR College of Engineering, Vastunagar, Mangalpalli (V), Ibrahimpatnam (M) 501510 Hyderabad -----
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(57) Abstract :

The abstract presents an overview of the eMBB (enhanced Mobile Broadband) and mMTC (massive Machine Type Communications)-based 5G IoT gateway. The gateway serves as a crucial component in the emerging era of connected devices and smart applications, enabling seamless communication and data exchange between diverse IoT devices and the 5G network infrastructure. The eMBB aspect of the gateway focuses on providing high-speed and low-latency data connectivity to support bandwidth-intensive applications such as immersive multimedia, augmented reality, and ultra-high-definition video streaming. Leveraging the capabilities of the 5G network, the eMBB-based IoT gateway enhances the user experience by ensuring robust and uninterrupted data transmission for latency-sensitive and data-intensive applications. On the other hand, the mMTC aspect addresses the massive connectivity requirements of IoT devices in scenarios where a large number of devices need to be interconnected simultaneously. The mMTC-based IoT gateway accommodates a wide range of low-power IoT devices, enabling them to efficiently connect to the 5G network and exchange data. This facilitates the deployment of large-scale IoT applications, including smart cities, industrial automation, and environmental monitoring, where an enormous number of devices need to communicate with minimal energy consumption. The eMBB and mMTC functionalities are integrated within the 5G IoT gateway to offer a comprehensive solution for diverse IoT use cases. The gateway provides the necessary protocols, interfaces, and security mechanisms to ensure seamless communication, efficient resource management, and reliable data transmission between IoT devices and the 5G network. Furthermore, it supports various connectivity options, including cellular, Wi-Fi, and Ethernet, to cater to different IoT device requirements and deployment scenarios. This abstract highlights the importance of eMBB and mMTC-based 5G IoT gateways in enabling the widespread adoption of IoT applications and services. The gateway's capabilities in delivering high-speed broadband connectivity and accommodating massive device connectivity lay the foundation for a connected world, empowering industries, businesses, and consumers to harness the full potential of the Internet of Things in the 5G era.

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