

INTERNET OF MULTIMEDIA THINGS

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With the rapid development of the Internet of Things (IoT) and real-time adaptability, people's quality of life is improving. IoT applications are diverse in nature, and one of their most important aspects is multimedia sensors and devices. These multimedia IoT devices form the Internet of Multimedia Things (IoMT). It generates a massive amount of data with different characteristics and requirements than the IoT. Real-time deployment scenarios range from intelligent traffic monitoring to smart hospitals. Consequently, timely delivery of IoMT data and decision-making is critical because it is directly related to human safety.

Internet of Things (IoT) devices have limited memory and data processing capabilities. Consequently, these limited devices rely on efficient routing protocols and a standardized communication stack. Internet of Multimedia Things (IoMT) devices are different from IoT devices. They require more memory, and more processing power, and are more demanding of power at higher bandwidths.

The main characteristic of IoMT is the timely and reliable delivery of data. Therefore, it has strict quality of service (QoS) requirements and requires an efficient network architecture. QoS can be characterized as objective or subjective. The Objective QoS of users is difficult to measure and varies greatly depending on the needs.

Multimedia data is growing manifold these days, this poses new challenges for data transmission, processing, storage, and exchange. Processing requires new methods for edge, fog, and cloud devices. New compression and decompression methods are being used to store multimedia data. The Routing Protocol for Low Power and Lossy Networks (RPL) is the standard IoT routing protocol.

IoT characteristics support multimedia communications; however, multimedia applications are bandwidth-intensive and delay-sensitive. The rapid growth of multimedia traffic in the IoT has led to the development of new methods to meet its requirements. IoMT devices require higher bandwidth, more memory, and faster computing resources to process the data.

The Internet of Things has revolutionized our world through large-scale data exchange, connecting objects to each other and making them intelligent, and interactive. In addition, IoMT allows media such as video, audio and based emergency response systems, traffic monitoring, crime checking, smart cities, smart homes, smart hospitals, smart agriculture, surveillance systems, Internet of Body (IoB), and Industrial IoT (IIoT) to be connected to the universal network for which synchronization and interoperability are vital.