Faculty of Engineering
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Heterogeneous Wireless Network

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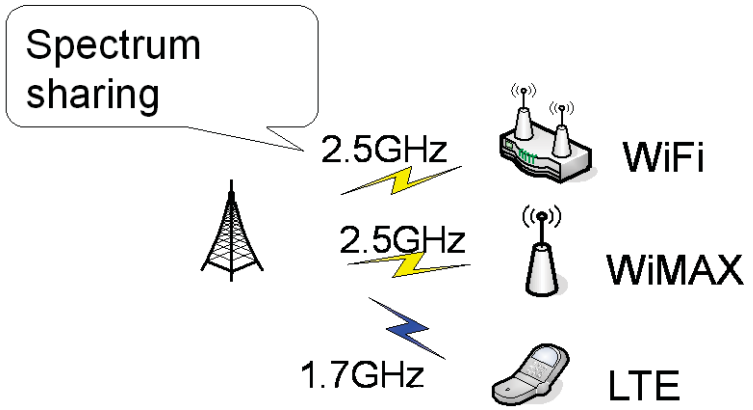

Fig.1 Spectrum Sharing

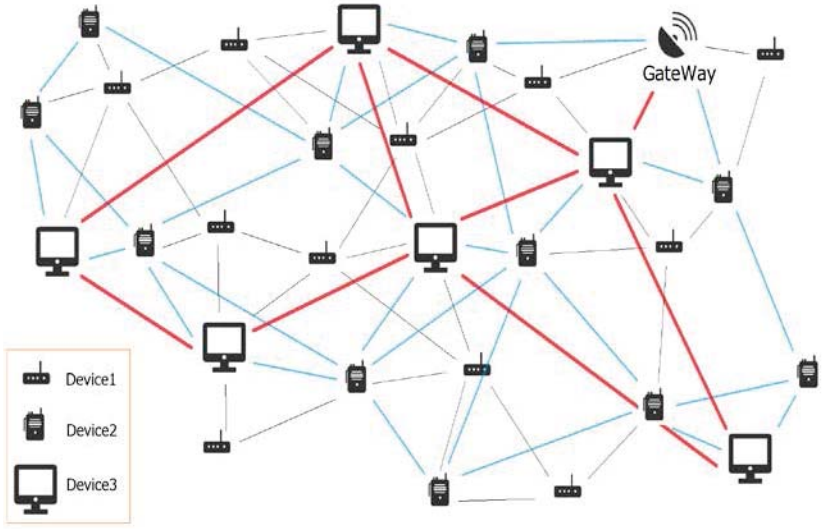

Fig. 2 Wireless Multihop Network for M2M/IoT Services

The number of wireless network users has remarkably grown by recent advances in wireless communication technologies such as WiFi and WiMAX. This has led to a lack of spectrum resources, which has therefore become an important issue. To overcome this problem, spectrum sharing technology, whereby a WiFi system temporarily uses a spectrum band of a WiMAX system, is receiving much attention. We propose a dynamic spectrum sharing method for ultimate utilization of wireless communication resources.

In addition, new services based on M2M (Machine-to-Machine) and/or IoT (Internet of Things) communications are also attractive. In such a network, tremendous number of terminals including sensors, actuators, etc. are connected, so that traditional networking technologies does NOT work well. We propose a new network platform to support M2M/IoT services in a unified manner.

Specifically, we research on the following topics.

Efficient spectrum sharing

Dynamic cell area optimization

Routing, buffer control, and channel assignment method in heterogeneous wireless multihop networks

Keywords : wireless network, spectrum sharing

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