

# **Abstract**

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## **Performance Evaluation of MAC for IEEE 802.11 and LAA LTE**

The considerable amount of underutilized spectrum in the unlicensed band has motivated 3GPP to study the introduction of LTE in the ISM band to fulfill its increasing demand for extra bandwidth. This will make LTE and Wi-Fi the main opponents in the ISM band. This paper presents the system performance analysis of MAC for LTE and a comparative study to Wi-Fi. Extensive MAC systems simulations are performed under various scenarios and with different parameters. The results show a better efficiency of channel access of Wi-Fi under high competition. Performance of LBT-based LTE MAC is dramatically affected by changing parameters while the performance of Wi-Fi MAC is sustained.