

## ABSTRACT

Radio frequency spectrum is a finite resource while the need for high-speed data and large-capacity increasingly urgent. With the release regulation of the Minister Communication and Information Indonesia no. 29 In 2012 , there are opportunities allocation for LTE (Long Term Evolution ) in the 2300 MHz band. Due to radio frequency 2300 MHz based on neutral technology<sup>[13]</sup>. However, at 2300 MHz frequency bands already allocated partly to BWA WiMAX (Worldwide Interoperability for Microwave Access) in the range of 2360-2390 MHz. As from November 2013, one of WIMAX operators migrating to LTE technology<sup>[14]</sup>. The use of the same or adjacent frequency band between two different systems in one area prone to intersystem interference.

To overcome the above problem , this thesis is analyzed the coexistence of two modeling methods . First, the coexistence without synchronization time frame to determine the minimum distance between the BTS WIMAX and LTE eNB in order not to interfere with each other. Second method, of synchronization time frame to get a pair of LTE and WiMAX frame configuration to avoid interference due to time overlap.

In the coexistence method without synchronization time frame, the minimum distance obtained in the coexistence of WiMAX and LTE is 6.3 km for 5 MHz frequency offset, frequency offset 8 km for 10 MHz and 11.9 km for 15 MHz frequency offset. At synchronization time frame method, is obtained the frame that can be used for coexistence scenarios . There are eight configuration WIMAX frames that can not be coexistence with all frames LTE due to interference caused by the time overlap and can also be shown that only LTE TDD configurations 1 and 2 which can be coexistence with WiMAX frame.

**Keywords: Coexistence, LTE, WIMAX, Interference, 2300 MHz**