Performance Analysis of License Assisted Access LTE with Asymmetric Hidden Terminals

ABSTRACT

- This paper considers an LAA-LTE eNB coexisting with asymmetric hidden Wi-Fi APs where the eNB can detect the APs while the APs cannot, which is caused by the asymmetric CCA thresholds.

- The behavior of such a network is modeled by a joint Markov chain, using which steady state probabilities, throughput, and channel access delay are derived analytically.

- An extensive evaluation confirms that the proposed analysis correctly models the dynamics of LAA-WLAN coexistence, and identifies important design guidelines for fair coexistence as follows.

EXISTING SYSTEM

- License Assisted Access LTE is a new type of LTE that aggregates the licensed LTE bands with the unlicensed bands via carrier aggregation.

- To operate in unlicensed bands, LAA-LTE adopts the listen-before-talk policy and designs its channel access mechanism similar to WLAN's DCF.

PROPOSED SYSTEM

- First, LAA-LTE should enable channel access priority class 4 to exploit its large contention window.

- Second, LAA-LTE should re-design its CW doubling policy to restore the balance between LAA-LTE and WLAN in throughput and channel access delay.

- In this work, we captured the asymmetric hidden terminal problem in an LAA network by modeling the network with a joint MC, and derived its stationary probabilities along with the key performance metrics

HARDWARE REQUIREMENTS

- Processor   -   Intel core i3
- RAM   -   2B
- Hard Disk   -   20 GB

SOFTWARE REQUIREMENTS

- Operating System : LINUX
- Tool : Network Simulator-2
- Front End : OTCL (Object Oriented Tool Command Language)

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