Evaluations of KPIs for Test Environments and Embedded System's Device Tree

A Project Report

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THESIS CERTIFICATE

This is to certify that the thesis titled **Evaluations of KPIs for test environments and Embedded System's Device Tree**, submitted by **V Bhavya Reddy**, to the Indian Institute of Technology, Madras, for the award of the degree of **MTech**, is a bona fide record of the research work done by her under our supervision. The contents of this thesis, in full or in parts, have not been submitted to any other Institute or University for the award of any degree or diploma.

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ABSTRACT

The radio communication sector ensures rational, efficient and economical use of the radio frequency spectrum by all radio communication services, including satellite services, and accordingly recommendations are proposed. ITU sets the requirements for 5G and these are written in IMT-2020. This project initially describes briefly the IMT-2020 requirements for self-evaluations or independent evaluations wherein KPIs are described briefly for various test environments; followed by the results obtained from system-level simulator. Three changes proposed by TSDSI are discussed. One involves configuring BWP, another one is setting static values for PTRS and configuring delay of the OFDM symbols. The system simulator results are obtained by considering the modifications proposed by TSDSI in order to optimise the current standards. Average Spectral Efficiency and 5^{th} percentile are evaluated using a system-level simulator. 5^{th} percentile is calculated for cell-edge user so as to ensure the existence of the network. Analytical results such as Peak Spectral Efficiency and Peak data Rate for FR1 by considering various overheads are calculated. The second chapter discusses the significance of device tree, how a device tree is understood, what goes into dts and dtsi files. The benefits of pin controller and various functions and groups of MIO pins. The thesis concludes by discussing the future scope.

CHAPTER 1

Due to confidentiality issues only abstract is uploaded. Complete thesis has been submitted to Dr. Radha Krishna Ganti. Kindly contact professor for full thesis