

VISVESWARAIAH TECHNOLOGICAL UNIVERSITY
BELGAUM



A
PROJECT REPORT
ON

**“DESIGN AND IMPLEMENTATION OF IEEE 802.16 MAC LAYER
SIMULATOR”**

**SPONSORED BY: KARNATAKA STATE COUNCIL FOR SCIENCE AND
TECHNOLOGY**

Submitted in partial fulfillment for the Award of Bachelor's degree in
Electronics and Communication Engineering

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ABSTRACT

The IEEE 802.16 Wireless MAN is a broadband wireless access network, which provides high-rate network connections to stationary sites, operates over greater distances, provides more bandwidth, takes advantage of a broader range of frequencies, and supports a greater variety of deployment architectures, including non-line-of-sight operation. The MAC protocol includes an initialization procedure designed to eliminate the need for manual configuration. Upon installation, a Subscriber Station begins scanning its frequency list to find an operating channel. It may be programmed to register with a specified Base Station. Systems shall support the applicable procedures for entering and registering a new Subscriber Station or a new node to the network. This project concentrates upon the network initialization procedure to bring up the subscriber and base stations in the 802.16 network. It also provides the Dynamic Service Management procedure for transportation connections. Socket programming has been used to perform simulations. This thesis describes the simulation and experiment setup.