



Remote Access to Wireless Communications Systems Laboratory- New Technology Approach

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Technology nowadays enables the remote access to laboratory equipment and instruments via Internet. This is especially useful in engineering education, where students can conduct laboratory experiment remotely. Such remote laboratory access can enable student to use expensive laboratory equipment, which is not usually available to students. In this paper, we present a method of creating a web-based Remote Laboratory Experimentation in the MSc course "Wireless Communications Systems" which is part of "Information and Communication Systems (ICS)" curriculum. This is done within the Replecs project.

The course "Wireless Communication Systems" gives students an overview of the characteristics of different types of antennas used in wireless communications and the wave propagation in mobile communications. The practical part consists of several assignments dealing with understanding the basic functions of the antennas as well as mobile communication propagation characteristics experiments.

The different types of antennas are changed in the system automatically without participation of an operator. This automatic change is made by means of an external antenna-switching controller board (EASCB). This automated system provides rapid installation of the correct antenna for the appropriate application and experiment, allowing the teacher not to be in the laboratory during each experiment.

The innovative automated system for antenna change is the main part of the Wireless Communications Remote Lab.