

**DEVELOPMENT OF WIRELESS SCORING SYSTEM FOR
CAVITE STATE UNIVERSITY**

Undergraduate Design Project
Submitted to the Faculty of the
College of Engineering and Information Technology
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In partial fulfilment
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Bachelor of Science in Electronics Engineering

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ABSTRACT

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The general objective of the study was to develop a wireless scoring system for Cavite State University. Specifically, it aimed to: design and construct the transmitter unit and receiver unit; develop GUI program for the transmitter system and receiver system; integrate the whole system; test and evaluate the system through pilot testing; and conduct a cost computation.

The design project was composed of two Raspberry pi 3 model B which serves as the microprocessor of the unit, two zigbee modules that serve as medium for the wireless transmission, and configured as transmitter and receiver. The transmitter unit displayed GUI and performed wireless transmission that gives an output display to the LED TV of receiver unit.

The system was limited to unidirectional transmission and was designed only for two modes of game such as basketball and volleyball. The display on the LED TV under receiver unit was limited for the given game statistics. For basketball, statistics include team score, team name, game clock, shot clock, team foul, period of the game, ball possession, time-out left, jump ball arrow, game clock and shot clock. For volleyball, statistics such as team name, team score, ball possession, set of the game, time-out and set score are displayed.

The unit was tested and the project testing was done at the Engineering Science (ES) Building, College of Sports, Physical Education and Recreation (CSPEAR), Cavite State University (CvSU), Indang, Cavite and at Silang, Cavite. The time response at fixed distance and comparison to the traditional scoring, maximum defective distance, and user acceptability were computed through the use of data in the evaluation.

Based on the results of the evaluation, the project met the given objectives. The system was able to transmit wirelessly. The device was also able to prove its efficiency, performance, functionality, accessibility, and security.

Technical evaluation showed that the wireless transmission of the device between transmitter unit and receiver unit had a maximum range distance of 100 meters. In addition, it had a consistent time response of 0.06 seconds without obstruction at the range of line-of-sight. However, the time response varied at an environment with obstruction.

The unit cost was P20, 550.00 acquired during the design project development.

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