# iWireless Vision Based Crop Harvesting Control Technique

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*Abstract*— **Now a day harvesting the crops from the field is very difficult because shortage of labors and high risk factors, so that the harvesting cost is higher than that of seeding and maintaining. In *this* project we want to make the work very easier by controlling the harvesting device from remote location. It will reduce the time and cost for harvesting the crops and it also give less physical strain to us. This paper describes the design and development of our wireless crop harvesting control technique. Wi-Fi camera is used to monitor the field by the user. The zigbee wireless communication technology is used to transfer the data between the user and RENASES microcontroller. RENASES microcontroller is used to control the reaper direction and the speed of the reaper motors.**

**Keywords**- *Zigbee, Wi-Fi, RENASES microcontroller*

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## I. INTRODUCTION

To enrich people comfort in gleaning crops machine reaping is used. But operating a reaper machine is not that much easy, so now we are used microcontrollers to operate the reaper machine. The command to the microcontroller can be transferred through the wireless technology. The reaper cut and lay the crops in a line; Threshing and cleaning can then be either manually or by machine. For 4G-120A Self-Walking Mini-typed Paddy & Wheat Harvesting Dryer, it's driven by the diesel engine. The power is outputted to the chain wheel through the gear box, and then to the gear case of the cutting platform. Then, it drives the cutting knife moving through the gear case, the eccentric wheel and the connecting rod. Later, the power is transmitted to the transmission shaft through the chain wheel on the gear-case box so as to make the transmission chain wheel working. When the Machine walks forward, the divider and the grain-lifter in front of the cutting platform would touch the crop first. Then, the grain-lifter cover, the grain-lifter star wheel and the belt would work together to lift and convey the crop to the cutting platform for cutting. With the comprehensive function of the upper & lower conveying chains, the grain-lifter star wheel,

and the upper & lower pressing springs of the grain-lifter, the cut crop would keep standing and be conveyed to the exit, and then placed on the field

## II. HARDWARE ARCHITECTURE
### A. Reaper Configuration



1, guide, 2, cutting rack 3, gearbox assembly 4, diesel engine 5,armrest frames 6, 7 cut sets aside Danggan clutch 8, the main clutch 9, steering handle with zigbee and Renases microcontroller

In this assembly we are mainly concentrating on steering handle and clutch control. The clutch control and acceleration is done remotely by the user for this zigbee and renases micro controller is used. Starting up the machine is done by Place the

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clutch handle on the position of "separating", the tap handle on the neutral gear, and the accelerator on "startup "and then Start up the engine. For turning right, please hold the right-turning handle. For turning left, please hold the left-turning handle.

### III.    Wireless Communication Platform

Zigbee/IEEE 802.15.4 is used for low data transfer to long distance. In this project it is used to transfer the control bits to the RENASES microcontroller which is in the receiver side. Wi-Fi IP camera is use to view the field by the user to operate the machine. This camera will transfer the high data rates like live video streaming.

### IV.    Receiver Module

The receiver module consist of zigbee transceiver module, RENASES RC8 A microcontroller, Camera and DC motor The renases microcontroller is used to control the DC motor by receiving the command from the user. The command given by the user from the sender module is received by the zigbee transceiver and it is given to the RENASES micro controller. According to the code the DC motor is operated. The DC motor controls the Clutch and Acceleration of the reaper machine.
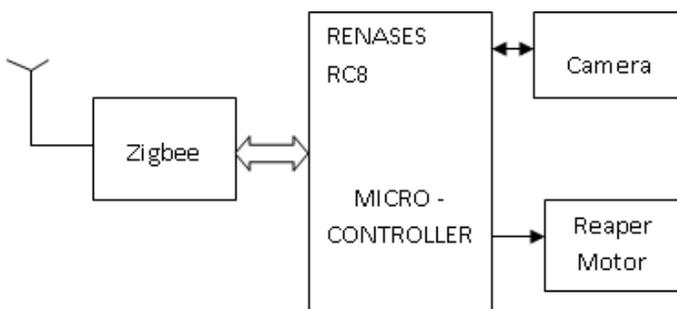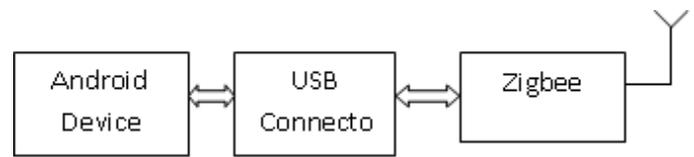


Fig: Receiver Module

### V.    Sender Module

The sender Module consists of Android Device, USB Connector, Zigbee transceiver. In this android device is used as remote controller. The control commands are given from the android device and it send to the zigbee through the USB connection cable. Then the zigbee transceivers send the data to the receiver module.



### VI.    CONCLUSION

Self walking harvesters are important for providing services to people. However, remotely controlled harvesting machines are still being evaluated for the agricultural fields. By this project we can make the harvesting very easy and simple. It also uses to save more time and labors.

### VII.    REFERENCES

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