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HAPTIC HAND ROBOTIC ARM

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ABSTRACT

Robotic Arm is extremely useful in several applications such as manufacturing, surgery, handling hazardous objects, handling microscopic objects, and very heavy objects. In bomb diffusion, it is always risky for human beings to go & diffuse bomb as it may explode at any time. In such case, we can send our robot arm over there whose movements can be controlled by Bomb Diffusion Squad. Also in the industries, the people may have to work near hot zones or chemical zones or radioactive zones. For these purposes Haptic technology is extremely useful. Haptics is the scientific field that studies the sense of touch. We use motion sensors and can track the position and orientation of other objects with the help of this robotic hand, like your fingers, for example. Just like a mouse or joystick can be used to control a program, your finger actions could be used to control a program[1].

The industrial robots perform their work repeatedly and their work remains fixed. They do not change their work. We have solved the problem of these robots that if any unexpected even occurred like falling of job from pick N place robot, then we can terminate its work. Through subroutine and haptics, we can lift up that job by the robot. We can fix this technology to already installed robots in the industry.

In this a man from remote place of around 50-100mts range sitting on his chair can easily control the mechanism by his hand. An ASK transmitter attached to human hand transmits the controlling codes. These codes are received by ASK receiver, decoded and given to microcontroller which then controls the motion of robotic arm. So as per user give motion by hand the motion of robotic arm is controlled from a remote place without any wire connection.

I. INTRODUCTION

This is the most advance version of "Pick n Place Robot". A person from a remote place can comfortably control the motion of robotic arm without any wire connection. Again there are two systems one at the transmitter side in which a software program written in C++ generates control signals. These signals are encoded and transmitted by RF transmitter chip. At another end RF receiver chip will demodulate these signals and decoder will decode it. Finally microcontroller will take desired controlling action on robotic arm[2].

Robotic Arm is extremely useful in several applications such as manufacturing, surgery, handling hazardous objects, handling microscopic objects, and very heavy objects. In bomb diffusion, it is always risky for human beings to go & diffuse bomb as it may explode at any time. In such case, we can send our robot arm over there whose movements can be controlled by Bomb Diffusion Squad. Also in the industries, the people may have to

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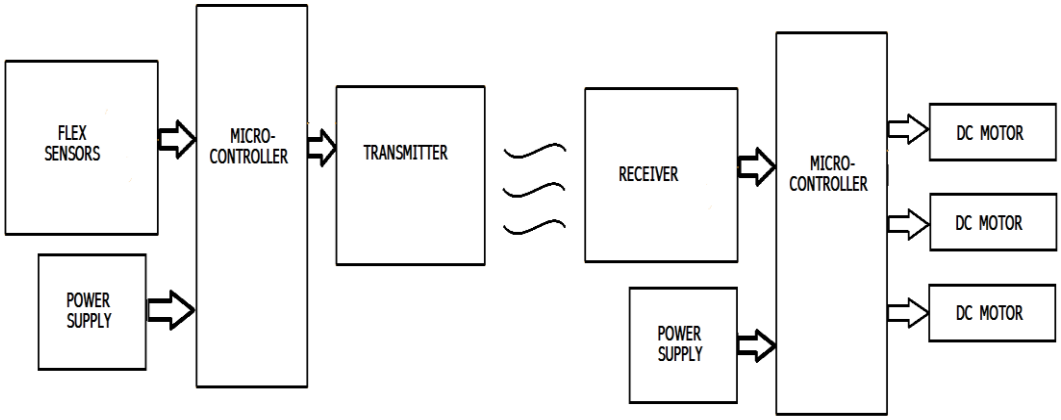
II. HAPTICS GLOVE SIDE

This device fits over the user's entire hand like an exoskeleton has potentiometers on finger, wrist & picks up change in resistance with hand movement.

III. ROBOTIC ARM

A robotic manipulator is a device capable of moving in different directions (base, shoulders, elbow, yaw, pitch, roll directions) elative to base and controlled by Haptics, Its base
is actuated by a D.C motor mounted beneath it. The degrees of freedom, or DOF, are a very important term to understand. Each degree of freedom is a joint on the arm, a place where it can bend or rotate or translate[4].

IV. BLOCK DIAGRAM



V. CONCLUSION

The synopsis proposes the system robotic arm based on real-world haptics. The primary goals of haptic guidance is to facilitate the learning of complex human motion skills by providing haptic cues that are helpful to induce desired movements.
The proposed system is utilized to recognize the human motion. Large potential for applications in critical fields as well as for leisurely pleasures. Haptic devices must be smaller so that they are lighter, simpler and easier to use. Haptic technology allows interactivity in real-time with virtual objects.

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Haptic is applicable across nearly all areas of computing including video games, medical training, scientific visualization, CAD/CAM, computer animation, engineering design and analysis, architectural layout, virtual toys, remote vehicle and robot control, automotive design, art, medical rehabilitation, and interfaces for the blinds.

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