SIMULATION BASED DESIGN OF ROBOTIC ARM AND OMNI DIRECTIONAL DRIVE MECHANISM OF DEXTO:EKA

[1]SULABH KUMRA, [2]SHILPA MEHTA,[3]RAJAT SAXENA&[4]RAMANDEEP SINGH

[1]IEEE member, Department of Electronics and Instrumentation Engineering, ITM University, Gurgaon

[2]B.Tech student, Department of Electronics and Communication Engineering, ITM University, Gurgaon

[3] B.Tech student, Department of Electronics and Instrumentation Engineering, ITM University, Gurgaon

[4]Assistant Professor, Department of Electrical Electronics and Communication Engineering, ITM University, Gurgaon

ABSTRACT

The presented paper is concerned with simulation based designing of a low-cost, easy to use, intuitive interface for the control of a slave anthropomorphic tele-operated robot. Tele-operator "masters", that operate in real-time with the robot, have ranged from simple motion capture devices, to more complex force reflective exoskeletal masters. Our general design approach has been to begin with the definition of desired objective behaviours, rather than the use of available components with their predefined technical specifications. With the technical specifications of the components necessary to achieve the desired behaviours defined, the components are either acquired, or in most cases, developed and built. The control system, which includes the operation of feedback approaches, acting in collaboration with physical machinery, is then defined and implemented.

KEYWORDS: Humanoid, Tele-Operated, Exoskeleton, Robotic Arm, Omni Wheel