

## **ABSTRACT**

*Patient beds are one of the mandatory facilities in hospitals for rehabilitation facilities. This facility functions as a resting place that has a mattress support base and to assist in the diagnosis, monitoring, prevention, treatment, healing of diseases due to injury or disability. Current patient beds not only use technology that is moved manually but can be moved automatically.*

*In some cases when medical personnel are not available to help the patient move the body position. To reduce the possibility of injury and accidents to patients caused by improper body position movements, it is necessary to have a bed that can help patients move certain positions without the help of medical personnel.*

*In this study, the tool that will be designed is a mechatronics-based patient bed movement prototype. The movement of the patient's bed has been determined, namely help to stand-up, fowler, and sitting which can be moved and there is an additional alarm feature for calling a nurse. The action desired by the patient can be selected using a selection of several pushbuttons available as a user interface.*

*The results obtained in this study were able to design a patient bed prototype that could change the help to stand-up position with the head higher than the feet  $15^\circ$  and the patient's position forming  $115^\circ$ , Fowler with head elevation of  $65^\circ$ , and Sitting which formed a position patient sitting by  $115^\circ$ . The travel time for each change of movement from normal, Help to Stand-up, Fowler, and Sitting is less than 40 seconds, to be precise 8.91 – 38.88 seconds. And the pushbutton system gets 100% accuracy from testing for bed movement and for sounding an alarm.*

*Keyword : Patients bed , mechatronic, help to stand-up, fowler, sitting, pushbutton*