AUTOMIZED JACQUARD POWERLOOM

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A Project Report
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ABSTRACT

Mechactronics can be described as the application of the computer and digital control system techniques to the mechanical problems through electrical and electronic interfaces. Today the various different technologies are dispersing to intermingle with other technologies to form a new area. Mechatronics is the outcome of such a process. This project is also a mechatronics solution to a need in textile industry.

Any cloth gets an appearance of design on it due to the lifting pattern of threads during weaving. In a type of machine called Jacquard power loom, the method used to achieve this lifting of threads for a design uses punched cards. The process of changing design takes minimum of eight days and costs about 25000 to 30000 rupees. Since the card assembly is very bulky there are many handling and processing difficulties also associated with them.

We are trying through this project to eliminate the punched cards. As an alternative we have proposed an idea of achieving the lifting of threads with the help of electro magnetic actuators. The system consists of software that generates a binary file from an image file (Design to be achieved). Then a dedicated system controls the panel of actuators using this file. This eliminates the changing of cards for different designs and hence all the disadvantages of cards, including the saving of money to a great extent.