

ABSTRACT

The dairy processing industry has experienced rapid growth in line with the increasing public interest in processed dairy products. In the milk production process, packaging plays an important role in maintaining product quality until it reaches consumers. Uncontrolled packaging processes can result in product damage or quality deterioration. Therefore, a system is needed that can better monitor and control the packaging process. This study aims to design a Human Machine Interface (HMI) for the packaging workstation of packaged dairy products, integrating principles of Human Factor Engineering and Ergonomics (HFE) in accordance with ISA 101 standards. The method used in this study is the Waterfall method, which includes the stages of needs analysis, system design, implementation, and testing. The results of the study indicate that the HMI design process was successfully carried out by integrating HFE principles in accordance with the ISA 101 standard, resulting in a user interface that enhances interaction between operators and machines, as well as supporting safer and more comfortable packaging of dairy products for users.

Keywords: *Human Machine Interface, Human Factor Engineering and Ergonomics, ISA 101, Packaging, Waterfall Method*