ABSTRACT

The need for the design solution of the Cyble sensor frame provides an opportunity to showcase the advantages of the TRIZ method, which can be applied to relatively simple cases. Therefore, this study aims to demonstrate that TRIZ is a simple and viable method for finding technical solutions across various industries. In this case study, the TRIZ method is employed to generate a solution for the Cyble sensor frame to accommodate the changes in the new Cyble sensor motherboard at PT XYZ, classified as a Small and Medium-Sized Industry (IKM). TRIZ serves as a toolkit to guide creative thinking, ensuring that innovative ideas do not merely rely on trial and error. It provides a logical approach to fostering creativity in inventive problem-solving. The TRIZ stages involve (1) defining a specific problem, (2) expressing the problem using one of the TRIZ tools (modeling the problem to facilitate the use of appropriate TRIZ tools), (3) applying TRIZ solution tools and obtaining general solutions based on the analysis, (4) creating specific solutions based on analogies to general solutions suggested by TRIZ. The resulting design solution can be applied to the new Cyble sensor motherboard, demonstrating its capability to accommodate changes. The solution design has a volume of 70,72 cm³, while the existing design has a volume of 117.38 cm³, indicating a 46.66% improvement in material consumption efficiency. The solution design experiences a structural change of 0.0431 mm, whereas the existing design undergoes a structural change of 0.0716 mm. This proves that the solution design has a stable structure, preventing undesired effects on the potential reduction of the frame's strength to protect the device inside. The outcome of this design solution illustrates the applicability of the TRIZ method. To utilize TRIZ effectively, key skills are required, particularly the ability to articulate the problem in a format that enables the application of TRIZ tools.

Keyword : TRIZ, IKM, Frame Cyble Sensor