

Inovasi *Liquid Filling Machine* Dengan *Digital Twin* Guna Memudahkan Proses Monitoring Dan Efisiensi Produksi Pengalengan Ikan (Subsistem 3d Modelling Dan Simulasi). (*Liquid Filling Machine Innovation with Digital Twin to Facilitate the Monitoring Process and Efficiency of Fish Canning Production (3D Modeling and Simulation Subsystem)*).

Ayunda Kusuma Wardani
Study Program Of Informatic Engineering
Majoring in Information Technology
Program Studi Teknik Informatika
Jurusan Teknologi Informasi

ABSTRACT

Liquid filling machines are an important requirement in a number of industrial sectors, including the beverage, food, chemical and pharmaceutical industries. The use of automatic liquid filling machines aims to reduce the risk of errors in measuring the amount of solution put into the packaging, so that both producers and consumers can avoid losses. In this article, the author implements digital twin technology to improve the performance of solution filling machines at lower costs by relying on gravity. Digital twin technology is considered a solution to improve the efficiency and performance of industrial processes by creating virtual replicas of physical systems. The main objective of this research is to build a 3D virtual replica of a solution filling machine and support wireless data communication via REST API as part of the digital twin implementation. Testing was carried out to check data transmission times in various different internet connection conditions. The results show an average data transmission time of 1.6 seconds, which is then visualized in the form of a 3D representation according to the physical machine conditions.

Key words: *liquid filling machine, digital twin, REST API*