

ABSTRACT

PT XYZ is a company that produces roof tiles located in Jatiwangi, Majalengka, West Java. In the process of moving the roof tiles from the firing process to the inspection process to the storage area in the production process is done manually by the operator which can cause the roof tiles to fall. At the time of the transfer of the roof tiles there were roof tiles that fell resulting in the roof tiles experiencing defects. In addition, at PT XYZ there is a difference in data on the actual production of roof tiles in the field with those in the bookkeeping records of production results. In solving the problems found at PT XYZ in this Final Project using a multi-layer approach to digital Twin. The process of designing a conveyor integration system with this quality sensor is designed based on three main layers in the multi-layer approach in digital twin, namely models, signals, and interfaces. After designing a conveyor integration system with a quality sensor with a multi-layer approach to the digital twin, the results obtained in the accuracy of tenting production data to 100%. In addition, by doing this design, the process of moving roof tiles from the combustion process to the inspection process to the storage area can be done automatically using a conveyor so as to reduce roof tile defects caused by the fall of roof tiles in the moving process.

Keywords - Digital Twin, Multi-layer, Data Accuracy, Moving Process, Defect.