

ABSTRACT

PT. ABC produces one of their electronic equipment, known as E-KTP Reader. In the production of E-KTP Reader, there are so many defect products which found at final assembly process. The main defect that usually occurs in the product are touchscreen display cracks, casing broken caused by bolt pierced, and mounting's bolts holes broken. Based on the information of the company in Operation Process Chart, there is only one inspection that implemented in whole process, which is at the end of the stage. According to the observation of taking 100 samples, PT. ABC produce 44 defect products and 56 passed products. So the percentage of defect is 44% which high enough to be allowed. A new scheme of inspection stage scenario is needed to help the company to reduce their defect products. It is necessary for the analysis of the assembly process of these products in order to design a most efficient modified inspections scenario to improve the existing scenario, which is intended to minimize the defects. There are four stages in final assembly process of E-KTP Reader. The scenarios are made from three combinations, which is inspection combination-1 (existing condition), inspection combination-2, and inspection combination-3. In combination-1, the inspection only occurs at the end of the stages. In combination-2, the inspection occurs between stage-1 and stage-2, and also at the end of the stage. In combination-3 or the last combination, the inspection occurs between stage-2 and stage-3, and also at the end of the stage. By calculating and comparison the inspection cost which is consist of cost of useless inspection and cost of rework for saving, the most efficient inspection combination can be chosen. After being compared, then PT. ABC will have a new inspection scenario stage and new Operation Process Chart to be implemented for their next project. Based on the comparison of expectation cost for each scenario, the most efficient one is combination-2, which spends cost of useless Rp 21.000,- and cost of rework for saving Rp 13.350,-. So, PT. ABC only needs to spend Rp 34.350,- as the total expectation cost for defect products. Although PT. ABC has already made solution, it does not mean they do not need some prevention methods to support the inspection activities. There are several solved prevention methods to avoid the occurrence of defect type on their product during final assembly process, which is related to increase the ability of work and also their operator's skill, and the last but important is operator's stamina.

Keywords: assembly process, locating inspection, inspection cost, E-KTP Reader.