

## **ABSTRACT**

*PT XYZ is a manufacturing firm that specializes in processed wood. The difficulty in the corporation is that the Finger Joint Fu-King Furnimate machine has a high frequency of machine breakdowns, with 73 damage in a year's time, 2020. Research is needed to analyze Reliability, Availability, Maintainability, and Safety analysis (RAMS), where the value is safety in the form of the Safety Integrity Level, based on these issues (SIL). The value of system reliability on the Finger Joint Fu-King Furnimate machine with a time range of 8 to 160 hours was calculated using RAMS Analysis using modeling Reliability Block Diagram (RBD) and analytical approach, with results obtained at  $t = 8$  hours of 88.40 percent and at time  $t = 160$  hours of 27.42 percent. value To obtain 100% system maintainability, it takes  $t = 8$  hours. On the Finger Joint Fu-King Furnimate machine, the inherent availability system value is 99.35 percent, and the operational availability system value is 99.91 percent. The Safety Integrity Level for the Finger Joint Fu-King Furnimate machine is set to the lowest level, which is 1. The value of the Finger Joint Fu-King Furnimate machine's leading and lagging indicators exceeds the world-class maintenance key performance indicator. When PT XYZ notices that the availability machine has a high value but the reliability machine has a low value, it needs to investigate the reasons for the poor reliability machine value. Then make changes to the machine maintenance mechanism, with PT XYZ's machine maintenance program involving production operators who are taught in machine maintenance procedures and proper machine operation.*

*Keywords: Maintenance, Reliability, Availability, Maintainability, Safety, Safety Integrity Level (SIL), Key Performance Indicator (KPI)*