

ABSTRAK

PT Rekaindo Global Jasa merupakan anak perusahaan PT INKA yang bergerak dibidang jasa konsultan *engineering* dan *support* komponen kereta api. PT Rekaindo Global Jasa seringkali mengalami keterlambatan komponen yang disebabkan karena ketidakpastian *lead time* dari *supplier* untuk proses produksi, yang menyebabkan peroses produksi sering mengalami keterlambatan atau *back order*. Metode perhitungan *safety stock* dilakukan dengan mempertimbangkan data historis *lead time*, kebutuhan harian, deviasi standar, dan tingkat *service level* yang disesuaikan dengan kategori. Hasilnya menunjukkan bahwa fluktuasi *lead time* dan kebutuhan harian sangat mempengaruhi kebutuhan *safety stock*, terutama pada komponen dengan *lead time* yang tidak stabil. Selanjutnya, penentuan *reorder point* dilakukan untuk menentukan waktu pemesanan ulang yang optimal. Sistem Kanban dirancang berdasarkan analisis aliran material dan interval pemakaian, menggunakan kartu penarikan dan kartu perintah produksi sebagai sinyal operasional. Hasil perancangan diatas diharapkan memunumalkanmenunjukkan bahwa integrasi sistem Kanban dengan metode perhitungan kebutuhan aktual memungkinkan dapat meminimalkan keterlambatan pengiriman antar proses, mengurangi kelebihan stok, serta mendukung kelancaran produksi dalam proyek 612.

Kata Kunci : *safety stock; reorder point; sistem kanban; lead time*

ABSTRACT

PT Rekaindo Global Jasa, a subsidiary of PT INKA, operates in the field of engineering consultancy services and railway component support. The company frequently experiences delays in component availability due to the uncertainty of supplier lead times, which often results in production delays or back orders. The safety stock calculation method in this study considers historical lead time data, daily demand, standard deviation, and service level, which is adjusted according to the component category. The results indicate that fluctuations in lead time and daily demand significantly influence the required level of safety stock, particularly for components with unstable lead times. Furthermore, the reorder point is determined to identify the optimal time for placing replenishment orders. The Kanban system is designed based on an analysis of material flow and usage intervals, utilizing withdrawal cards and production order cards as operational signals. The design results show that the integration of the Kanban system with actual demand-based calculation methods can minimize inter-process delivery delays, reduce excess inventory, and support smooth production flow, especially in the context of Project 612.

Keywords: *safety stock; reorder point; kanban system*