

Perancangan perbaikan proses penanganan refrigerated container terminal peti kemas dengan pendekatan business process re-engineering = Refrigerated container handling process design improvement in container terminal through the implementation of business process re-engineering

Nadiyah Nisa Azzahra, author

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Abstrak

Penanganan kontainer berpendingin atau refrigerated container memiliki tantangan yang lebih besar karena membutuhkan efisiensi yang tinggi. Penanganan melalui pemantauan manual di lapangan penumpukan menimbulkan risiko terhadap kerusakan muatan akibat ketidakmampuan dalam memberikan respons dengan cepat. Tujuan dari penelitian ini adalah merancang perbaikan proses penanganan refrigerated container melalui penggunaan teknologi internet of things (IoT) dengan pendekatan business process re-engineering (BPR) untuk mendapatkan informasi secara real-time dalam menjaga muatan dari kerusakan dan mempercepat waktu proses penanganan di terminal kontainer. Penelitian ini memiliki tiga skenario perbaikan proses yang terdiri dari kombinasi perbaikan BPR best practice melalui integrasi teknologi, yaitu dengan pengimplementasian automatic container damage detection system (ACDD) dan IoT based reefer real-time monitoring system (RRMS). Hasil simulasi terhadap ketiga skenario tersebut menghasilkan waktu proses penanganan yang berbeda untuk setiap skenario. Model sistem informasi juga dirancang untuk mendukung hasil proses perbaikan bisnis dengan mengadopsi model To-Be skenario ketiga yang merupakan skenario terlengkap dari penelitian dengan penurunan waktu siklus keseluruhan proses sebesar 61,7%.
.....Handling refrigerated containers poses more significant challenges because they require high efficiency. Handling through manual monitoring in the stacking yard poses the risk of cargo damage due to the inability to respond quickly. The purpose of this research is to design improvements of the refrigerated container handling process through the implementation of internet of things (IoT) technology with a business process re-engineering (BPR) approach to obtain real-time information in keeping cargo from damage and increase the processing time at container terminals. This study has three process improvement scenarios consisting of a combination of best practice BPR improvement through technology integration by implementing the automatic container damage detection system (ACDD) and IoT based reefer real-time monitoring system (RRMS). The simulation results for the three scenarios resulted in different handling processing times for each scenario. The information system model is also designed to support the business improvement process's results by adopting the third scenario To-Be model, which is the most comprehensive scenario from the study, with a reduction in the cycle time of the entire process by 61.7%.