Pengembangan model simulasi dalam rangka perancangan reconfigurable manufacturing systems = Simulation model development in order to design reconfigurable manufacturing systems

Ilham Winoto, author

Abstrak

Reconfigurable Manufacturing Systems (RMS) adalah sistem manufaktur yang mempunyai kemampuan mengkonfigurasi ulang hardware, software dan pusat kontrol pada level fungsional dan organisasional supaya secara cepat menyesuaikan kapasitas dan fungsionalitas produksi sebagai respon terhadap pasar atau syarat pengaturan sistem yang berubah secara tiba-tiba.
Tesis ini membahas mengenai pengembangan model simulasi RMS dalam rangka perancangan RMS yang dilihat berdasarkan hasil produksi dan penggunaan waktu produksi. Model ini dibuat dengan menggunakan metode simulasi berorientasi objek.
Dari hasil simulasi dan analisis model dapat disimpulkan bahwa model simulasi RMS ini telah mengandung kaidah dari keenam karakteristik RMS (scalability, convertibility, integrability, modularity, customization dan diagnosability) sehingga dapat digunakan sebagai alat bantu dalam rangka perancangan dan penerapan RMS pada industri manufaktur.
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Reconfigurable Manufacturing Systems (RMS) is a manufacturing system that has an ability to reconfigure hardware, software and control resources at all on the functional and organizational levels, in order to quickly adjust production capacity and functionality in response to sudden changes in market or in regulatory requirements.
This thesis discusses the development of simulation model in order to design the RMS which is observed based on the production result and the use of production time. This model was made by using the method of object-oriented simulation.
From the results of simulation and analysis models can be concluded that the RMS simulation model already contains the rules of the six characteristics of RMS (scalability, convertibility, integrability, modularity, customization and diagnosability) so it can be used as a tool in the design and implementation of RMS in manufacturing industry.