

## INTISARI

### PERANCANGAN ULANG TATA LETAK FASILITAS PRODUKSI DI PT INTI LUHUR FUJA ABADI, PASURUAN, JAWA TIMUR

PT Inti Luhur Fuja Abadi adalah industri pengolahan beku filet, teri nike, dan ikan utuh beku berskala internasional yang memiliki permasalahan panjang lintasan operasi sehingga menyebabkan proses produksi kurang efisien. Penelitian ini bertujuan untuk merancang ulang tata letak fasilitas produksi PT Inti Luhur Fuja Abadi dan mendapatkan perbandingan kinerja antara tata letak saat ini dan tata letak baru dengan mempertimbangkan beberapa faktor seperti hubungan aktivitas, panjang lintasan, dan ongkos *material handling*. Proses perancangan ulang tata letak ini dilakukan dengan metode SLP (*Systematic Layout Planning*) didukung oleh pemrograman lanjar UA-FLP (*Unequal Area Facility Layout Problem*). SLP merupakan metode perancangan ulang dengan prinsip langkah demi langkah, sedangkan UA-FLP merupakan metode perancangan tata letak fasilitas produksi berbasis algoritma *differential evolution*. Hasil penelitian menunjukkan bahwa tata letak baru dapat memberikan efisiensi produksi yang lebih besar sehingga dapat menurunkan biaya *material handling* sebesar 26,93% dibandingkan tata letak awal. Panjang lintasan aliran material filet, ikan utuh, teri nike, sisa filet, lintasan karyawan, pengemas, es kristal, dan es curah secara berturut-turut berkurang sebanyak 40,80%, 36,87%, 39,87%, 37,15%, 8,53%, 0,74%, 3,52%, dan 89,05%. Hasil perancangan ulang tata letak mampu menurunkan nilai panjang lintasan dan OMH dari tata letak awal, sehingga dapat dipertimbangkan dan diakomodasi industri saat akan melakukan proses penataan ulang fasilitasnya.

**Kata kunci:** aliran bahan, ongkos *material handling*, SLP, tata letak, UA-FLP

## ABSTRACT

### RELAYOUT PRODUCTION FACILITIES AT PT INTI LUHUR FUJA ABADI, PASURUAN, EAST JAVA

PT Inti Luhur Fuja Abadi is an international frozen fillet fish, raw white baits, and whole fish industry that has a problem with material flow distance and causes inefficiency in the production process. This study aims to redesign the layout facility of PT Inti Luhur Fuja Abadi and gets the performance comparison between the present layout and the new layout by considering several factors like activity relationship, production track length, and material handling cost. The method for this relayouting is SLP (Systematic Layout Planning) method supported by UA-FLP (Unequal Area Facility Layout Problem) program. SLP is a step-by-step method for redesign layout production facilities. UA-FLP is a method that solves facility layout problem based on differential evolution algorithm. The result of the study shows that the new layout can give more efficiency production that can decrease the material handling cost up to 26,93% from the present layout. The, production track length of fillet, whole fish, raw white baits, the remains of fillet, employee path length, packer, tube ice, and flake ice respectively decrease up to 40,80%, 36,87%, 39,87%, 37,15%, 8,53%, 0,74%, 3,52%, dan 89,05%. The result of relayouting production facilities can reduce the material flow distance and material handling cost from the present layout, therefore it can be considered and accomodated by the industry when it plans to rearrange the facilities.

**Keywords:** layout, material flow, material handling cost, SLP, UA-FLP