

Figure 1. Schematic diagram for the crew allocation problem in the precast concrete industry (Al-Bazi et al. 2010)

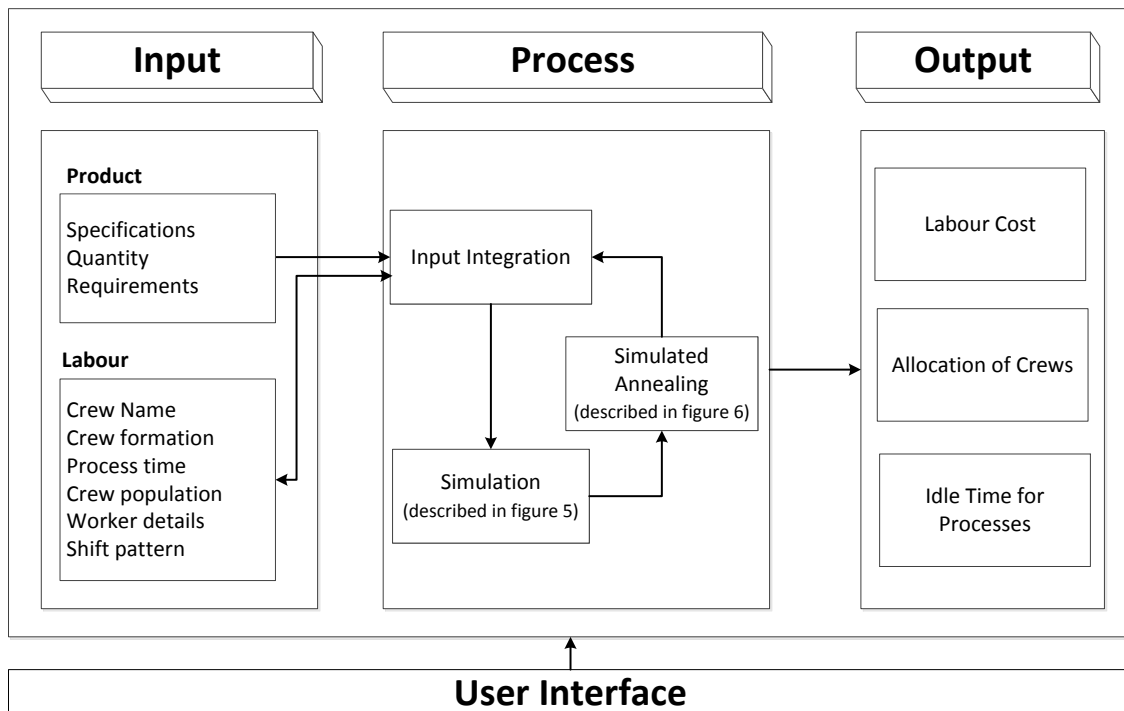


Figure 2. "S_MLSA" System Architecture

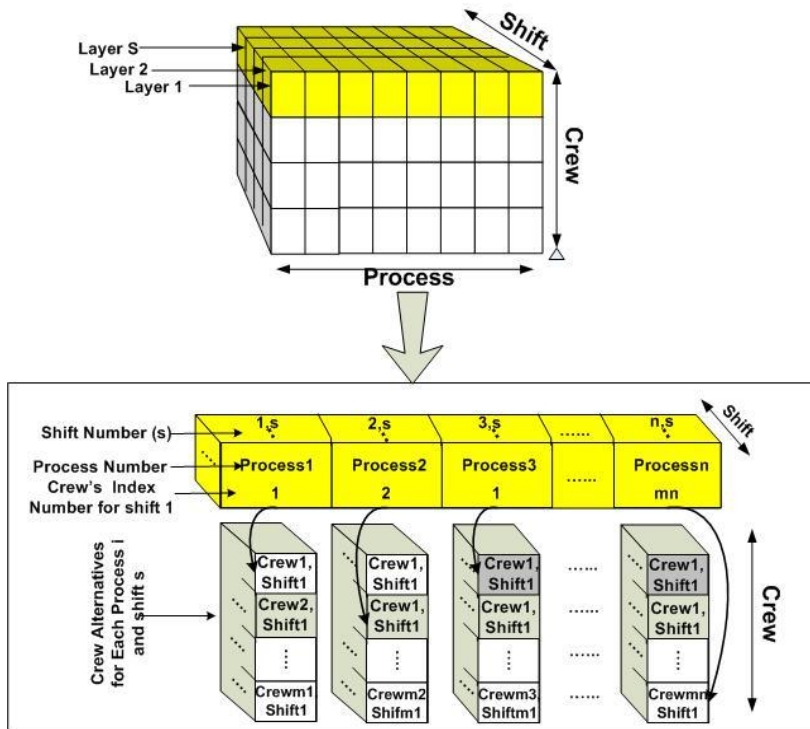


Figure 3. Multi-Layered Crew's Vector representation for crew allocation problem

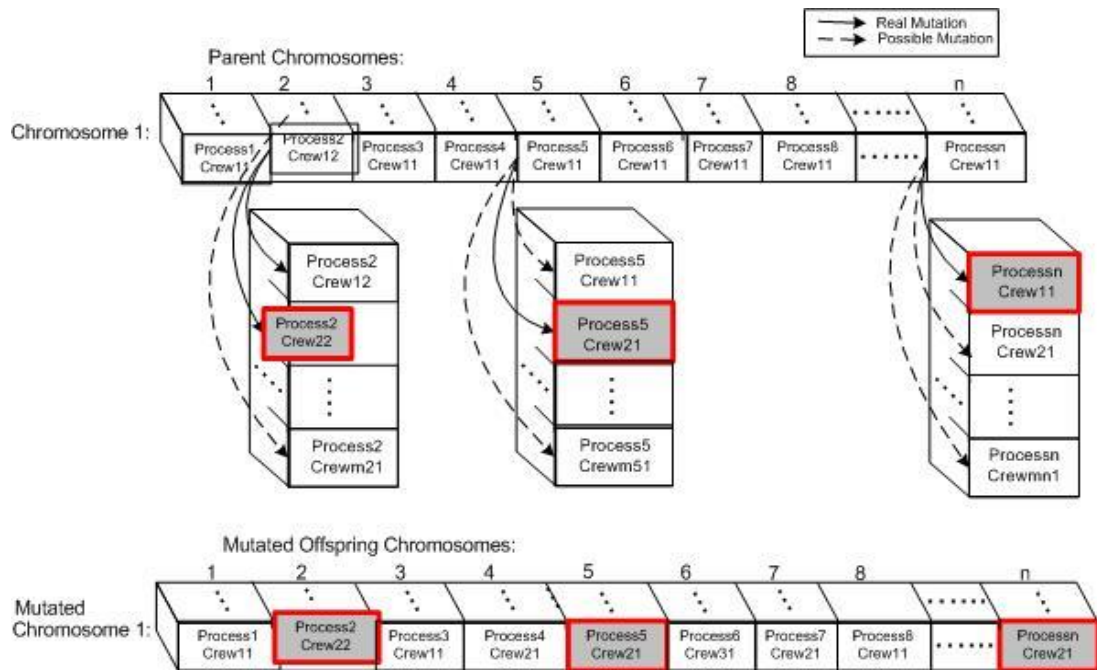


Figure 4. The Probabilistic Dynamic Mutation (PDM) strategy

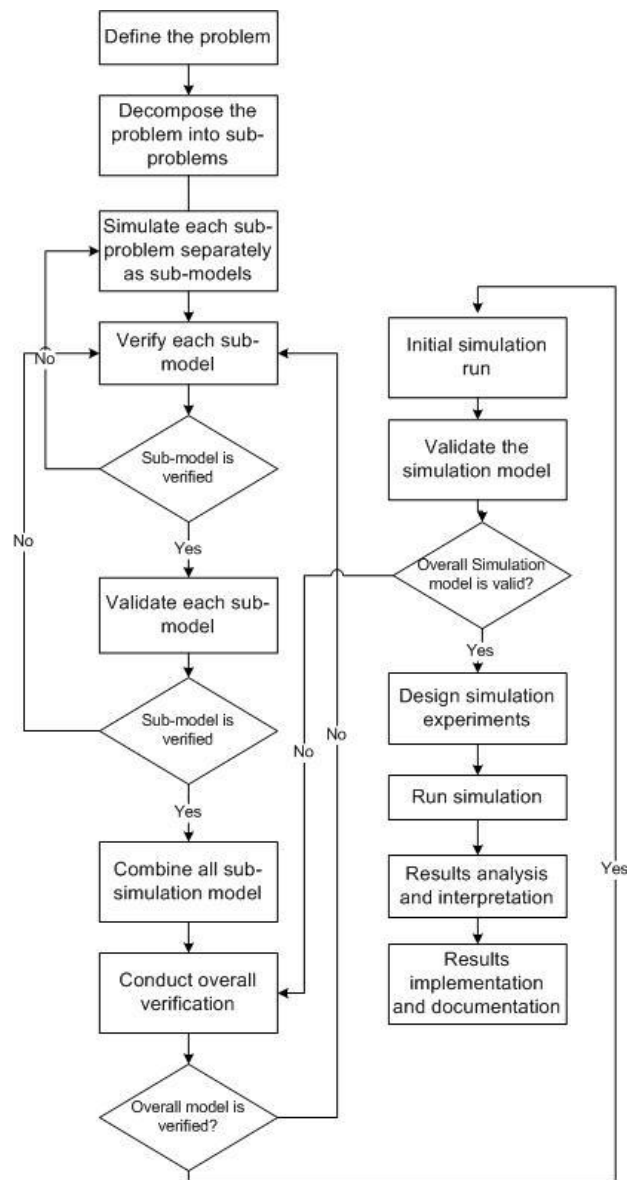


Figure 5. The proposed decomposition simulation methodology, (modified from Banks, 1999)

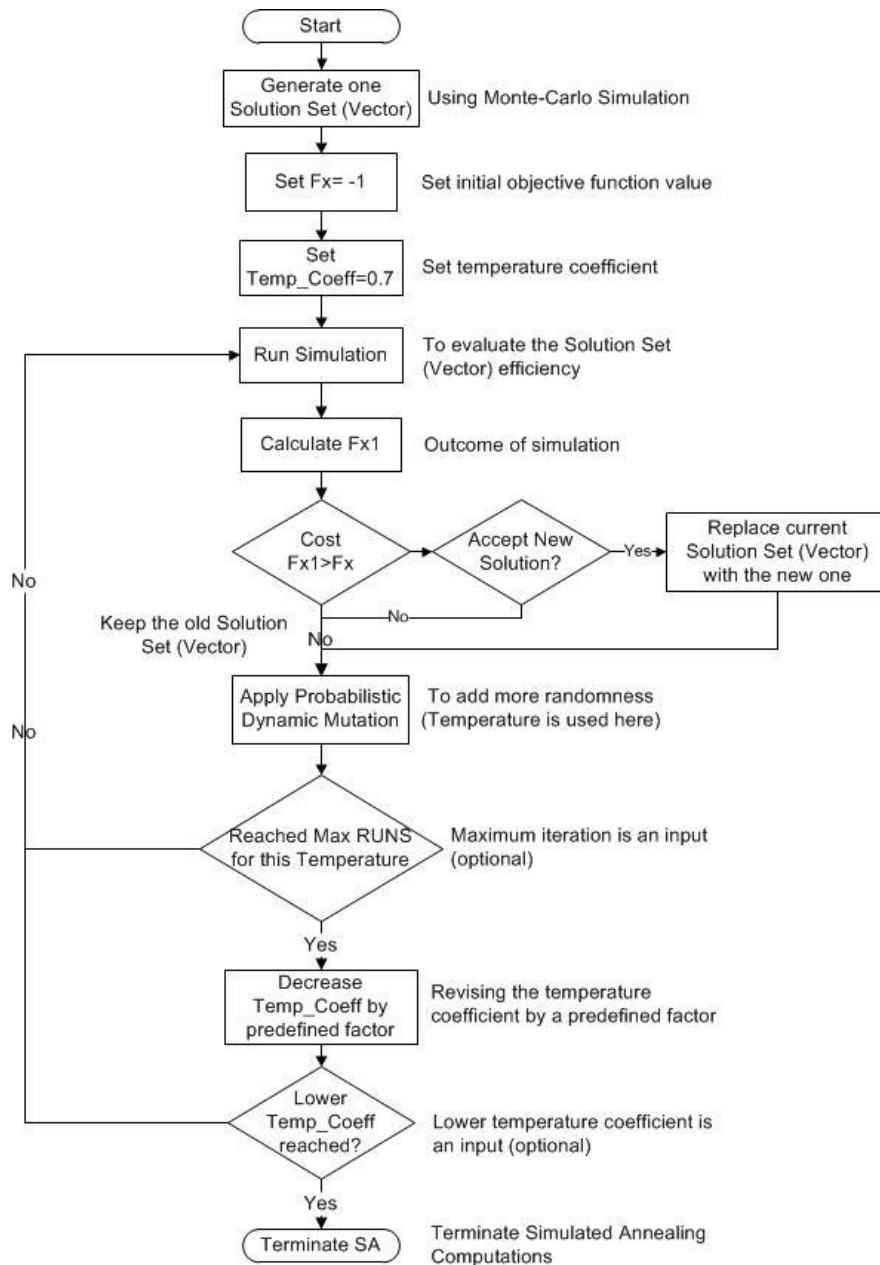


Figure 6. The simulated annealing algorithm (modified from Buseti, 2003)

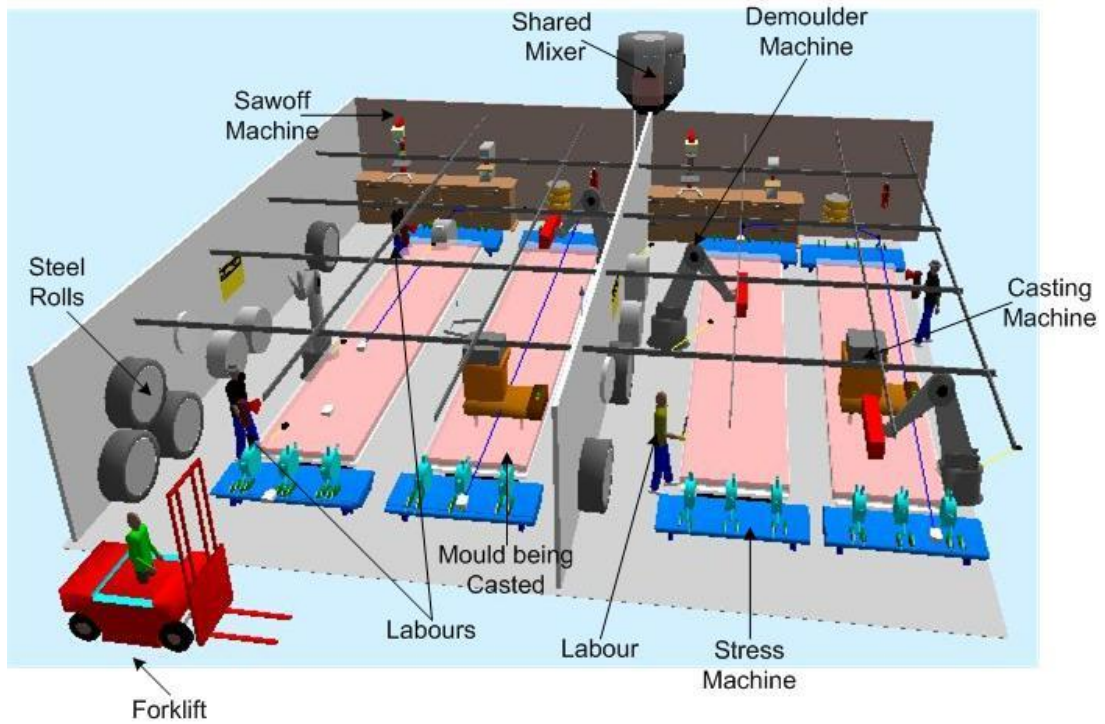


Figure 3. Simulation snapshot of the parallel repetitive operations layout

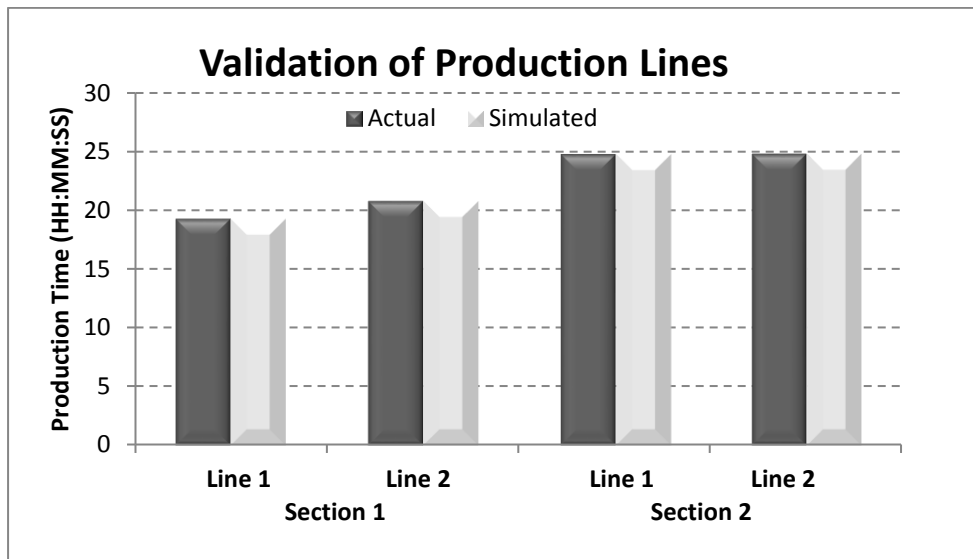


Figure 4. Validation of the manufacturing system

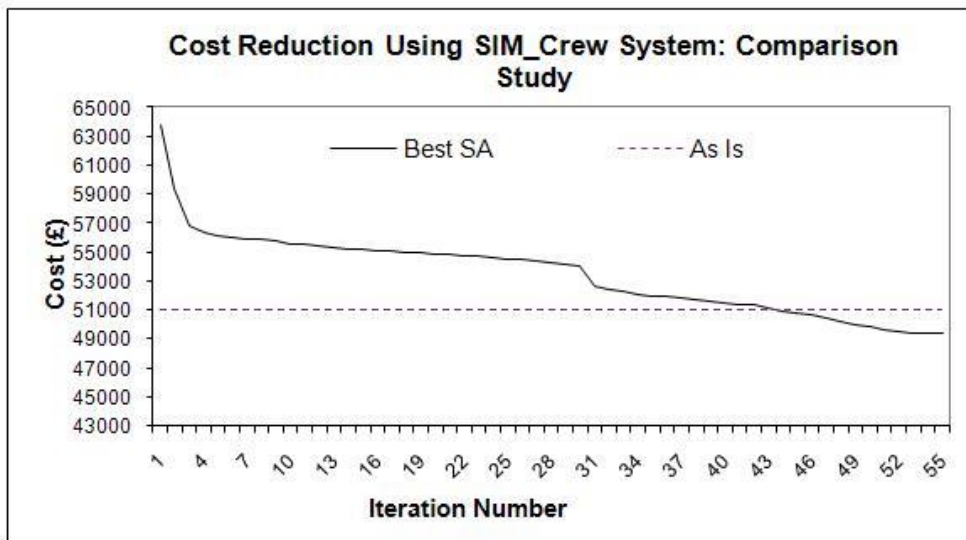


Figure 5. The average cost reduction using “S_MLSA” system

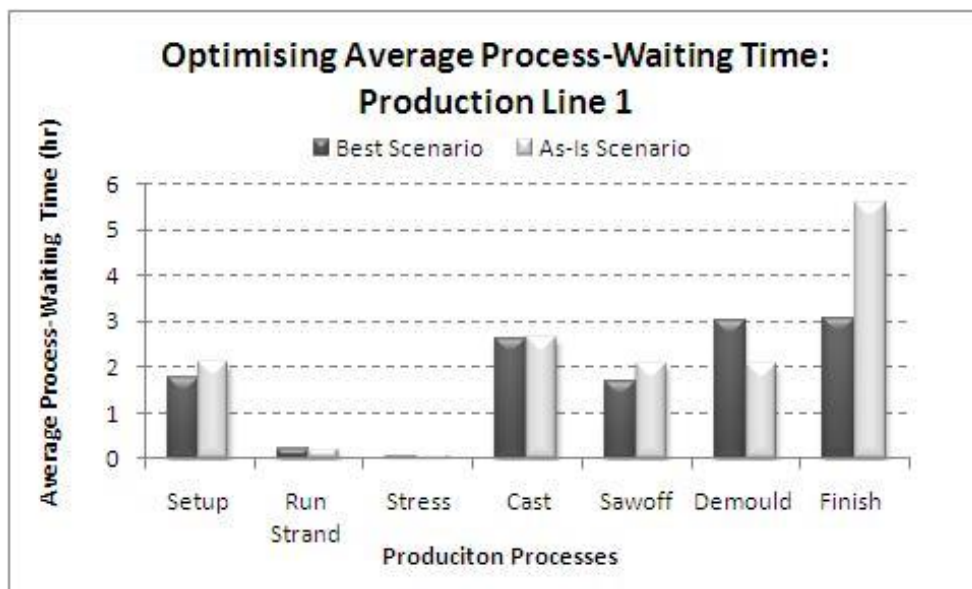


Figure 6. Optimisation of process-waiting time (production line1)

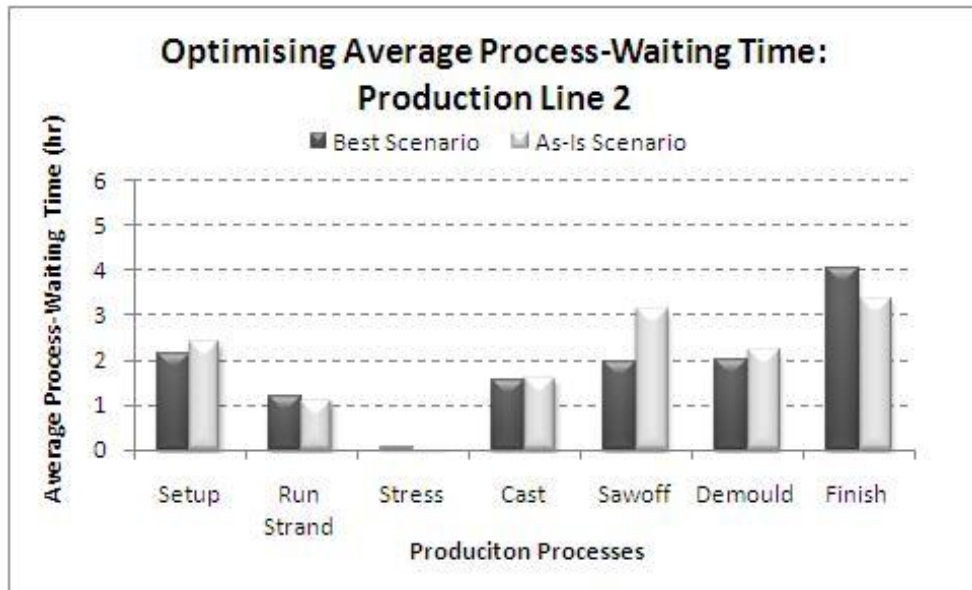


Figure 7. Optimisation of process-waiting time (production line 2)

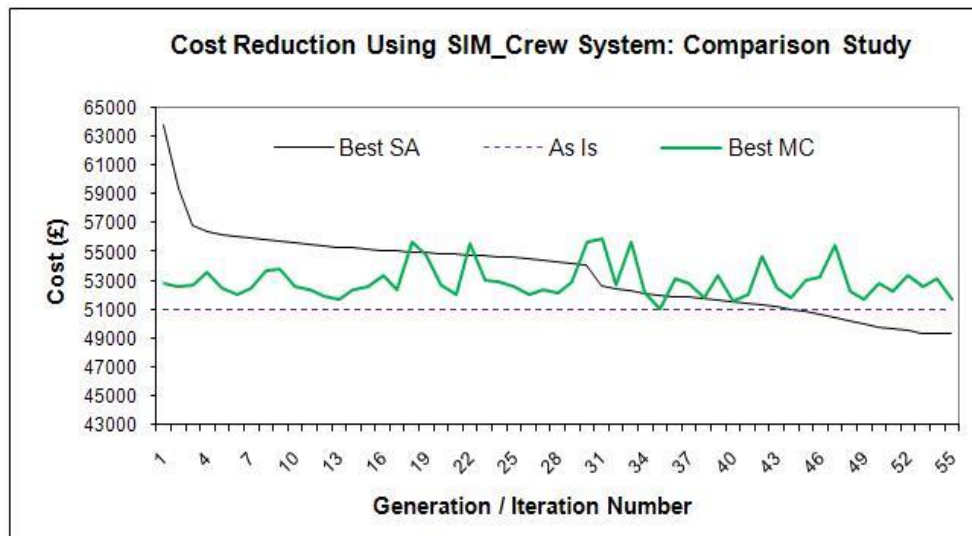


Figure 8. Cost comparison study of SA with Monte-Carlo and “As-Is” scenario