A study of an automated storage and retrieval system using FlexSim Simulation Software. A FlexSim model builder created a simulation model of the system to validate the proposed changes to the facility — resulting in improved warehouse efficiency for the end client.

Skarnes Inc., a material handling systems integrator located in Plymouth, MN, wanted to increase the throughput of one of its client’s warehousing processes. The client used an Automated Storage and Retrieval System (AS/RS) that interfaced with a conveyor loop, transporting pallets to a picking station and then
This simulation model was an invaluable tool for our project. FlexSim was professional and easy to work with.

Matt Thibodeau
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back to the AS/RS. This system was capable of picking 70 pallets per hour, and was studied by Skarnes for potential improvements.

ISSUES TO SOLVE

After observing this operation, Skarnes assumed that the number of pallets picked per hour would increase if conveyor congestion could be decreased in front of the AS/RS. Skarnes came up with the idea of adding another mainline conveyor for outbound pallets; this new conveyor would be located above the existing mainline conveyor. To prove the validity of this option to their customer, Skarnes commissioned a computer simulation of the system.

RESULT

FlexSim developed an accurate 3D simulation model to confirm Skarnes' proposal. By adding this upper level mainline conveyor, the simulation model showed that the number of pallets picked would rise from 70 to 100 pallets per hour, an increase of 43%. The 3D animation of the system also visually confirmed that conveyor congestion was greatly reduced, adding another level of validation for the client.

INCREASED PALLET PICKING BY 43%