



DAIFUKU
WYNRIGHT CORPORATION

Automation in Transportation and Logistics

NUTC Business Advisory Council Meeting 10.19.17

Large Scale Automated Fulfillment



Challenges

- High Labor Costs
- Plan for future growth

Solution / Technology

- Automated Handling & Sequencing w ASRS
- Residuals Process
- VAS
- Pack & Hold
- Unit Sorter Consolidates Orders before VAS
- PnA
- Receiving Process and Routing to Palletizing

Results

- Over 50% reduction in NVA, with like reduction in labor
- Capacity increased w/ 25% for future growth



VAS



Pack & Hold



Unit Sorter

Large Scale Automated Fulfillment

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Temporary storage of active pick residuals in mini-load ASRS reduces touches.

Automated Fulfillment / Goods to Robot

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Challenges

- Changing market conditions and an increase in e.comm competition
- Reduce order cycle time to customers
- Consolidate 3 facilities into one building

Solution / Technology

- (3) Mini Load ASRS for storing and sequencing/synchronizing the release of frames and lenses to auto order consolidation
- (2) Robotic Each Pick Cells to auto pick and consolidate an individual frame with a lens to complete order
- WES to manage inventory, and perform matching and syncing of orders

Results

- System consolidated current operations into one building
- Increased speed and accuracy of delivery
- Reduction of labor content



ASRS



Robotic Picking Cells



WES

Automated Fulfillment / Goods to Robot

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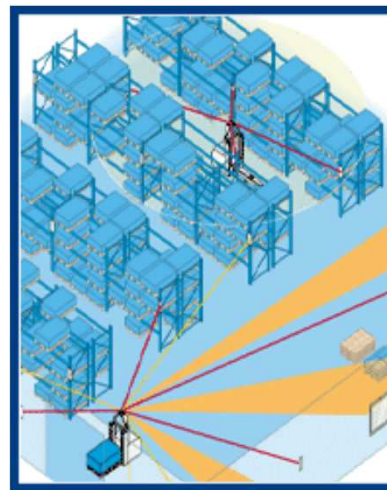
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Autonomous Vehicles – DC Material Transportation

- Assisted Putaway / Picking



- Auto Truck Loading



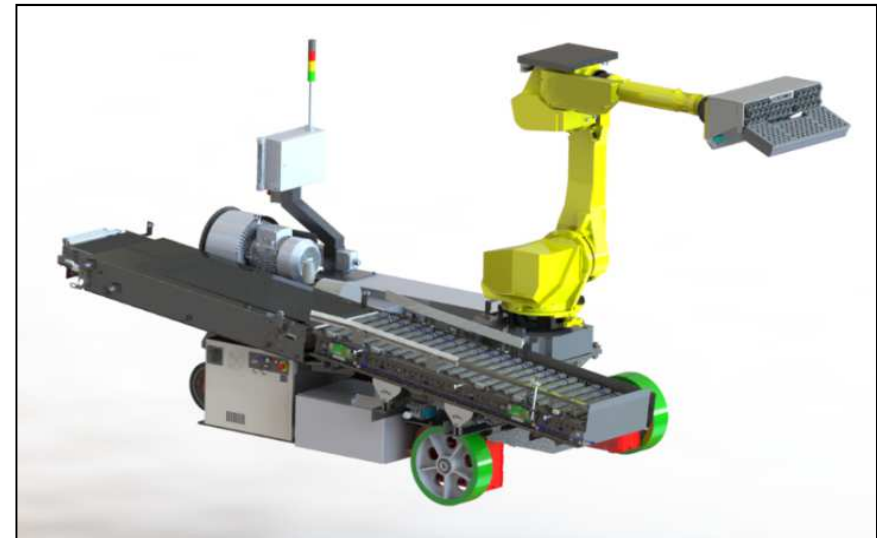
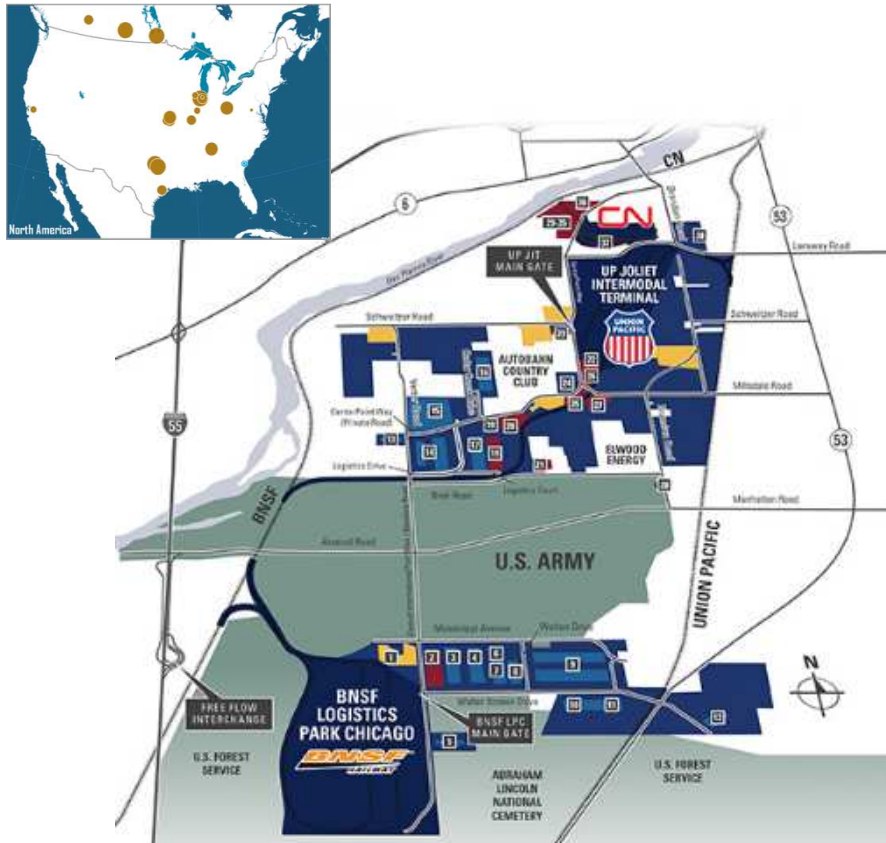
Autonomous Vehicles – Auto Truck Loading

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Autonomous Robots / Container Unload - Inland Ports

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De-Consolidation / Cross Dock

- Inbound – ISO Sea Containers Floor Loaded
- Outbound – Domestic Containers Floor Loaded

Palletization

- Convert ISO Sea Container Loads to Pallet Loads

Autonomous Robots / Container Unload - Inland Ports

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Automatic Unloading of Ocean
Freight Containers