

# Mechanical Engineering Solutions

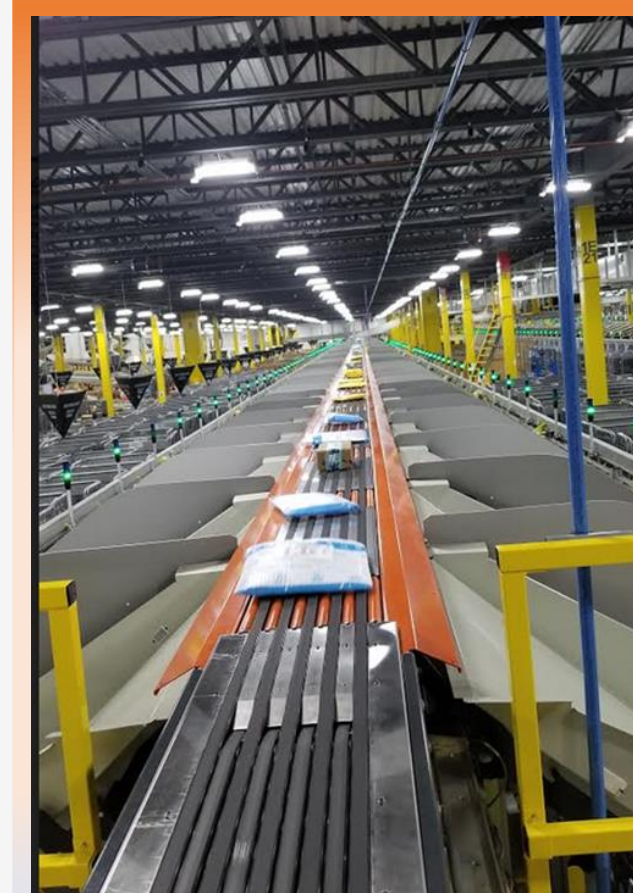
By AClusterLLC USA

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# About Acluster LLC

We are conveniently located in the Baltimore suburb in Maryland, USA only 30 minutes away from Washington DC. Since inception in 2007, A cluster LLC has provided technical solution for the Robotics, Logistic and Material Handling industry in the USA. As an expert solution integrator and innovative designer, the company has worked with many partnerships to solve cutting edge industrial automation challenges. Partnering with PostIs USA and Fluence USA it has designed many solution which is deployed globally in USPS, DHL, UPS, UK Mail, Russia Post, Canada Post, Sick AG, Amazon etc.... Our expertise includes Robotics integration, eCommerce fulfillment center design, mathematical modeling, concept simulation, business "use cases" modeling, machine vision, machine learning, postal automation, factory automation, auto-ID, camera-based motion tracking and inspection systems for the industry. We are a system integrator committed to provide a complete and proven turnkey technology solution for the project, leveraging many years of experience in the process automation and engineering innovation.



*Our solution for Amazon fulfillment center in CA*

# Mechanical Engineering: Our solutions deployed globally

*Our team has produced large scale mechanical design solutions which integrate Robotics, Motion controls, Optics and Visions. We have a deep understanding of manufacturing process and deployment challenges of complex system.*

- ❑ Our expertise on Machine design
  - We design advance Robotic Application
  - Sorting solutions
  - Pick and place Robotics
  - Structural engineering
  - Material handling systems
  - Factory Automation
  - Complex Linkages

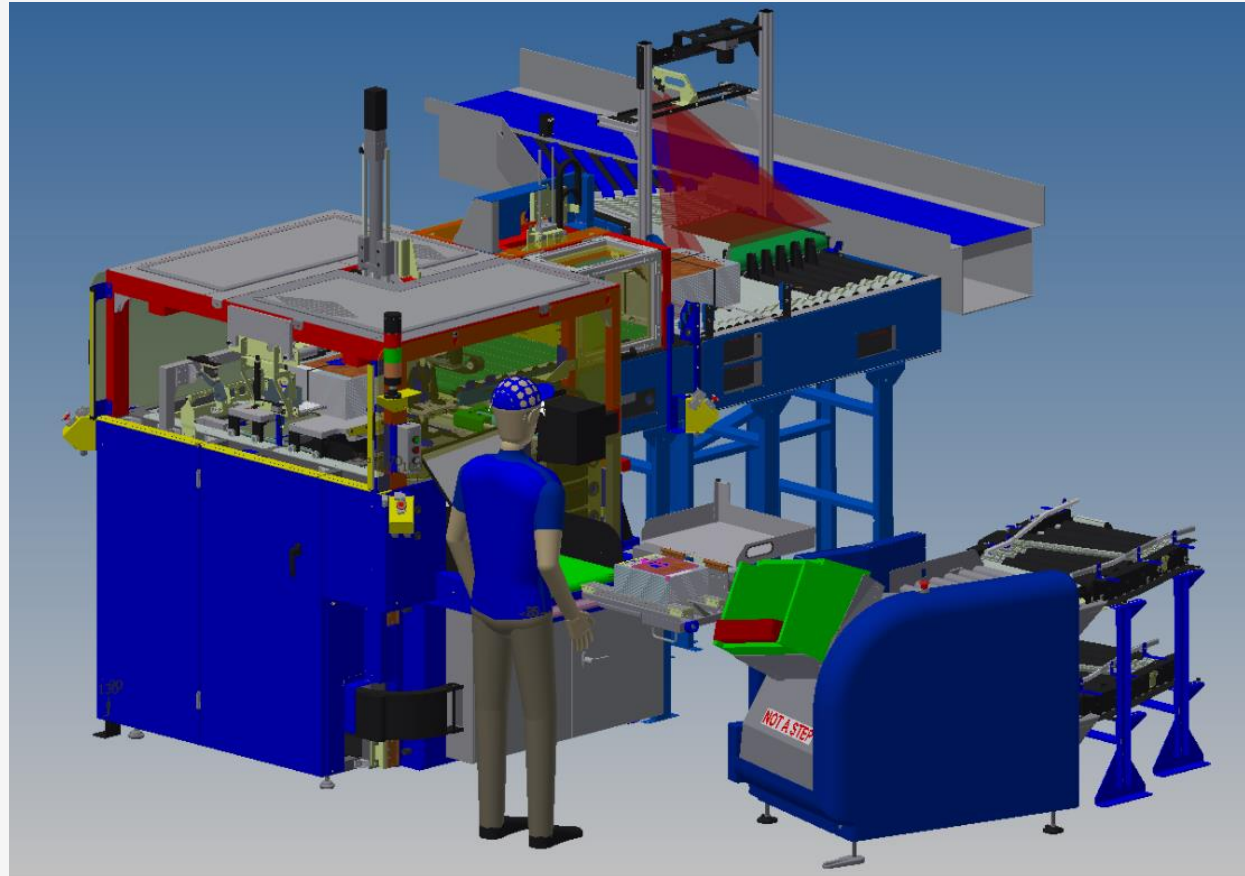


*Our designed Sorting system with Fluence Automation deployed in Amazon Hyden sorter!*

# Mechanical Engineering: Our solutions deployed globally

*We use industry standard design tools for 3D modeling, drafting, simulation and structural analysis*

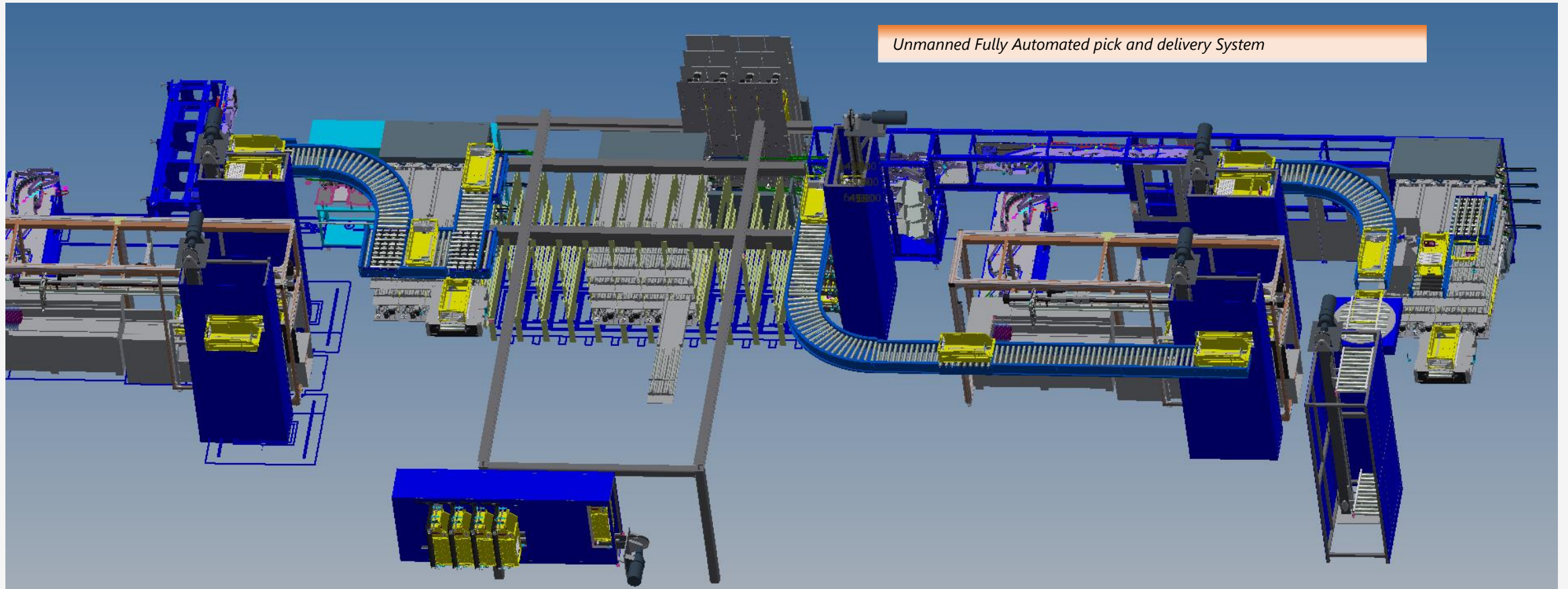
- Our expertise on Machine design toolset
  - Autodesk Inventor
  - Autocad
  - Solidworks
  - Catia



*Our designed Robotic application with Inventor!*

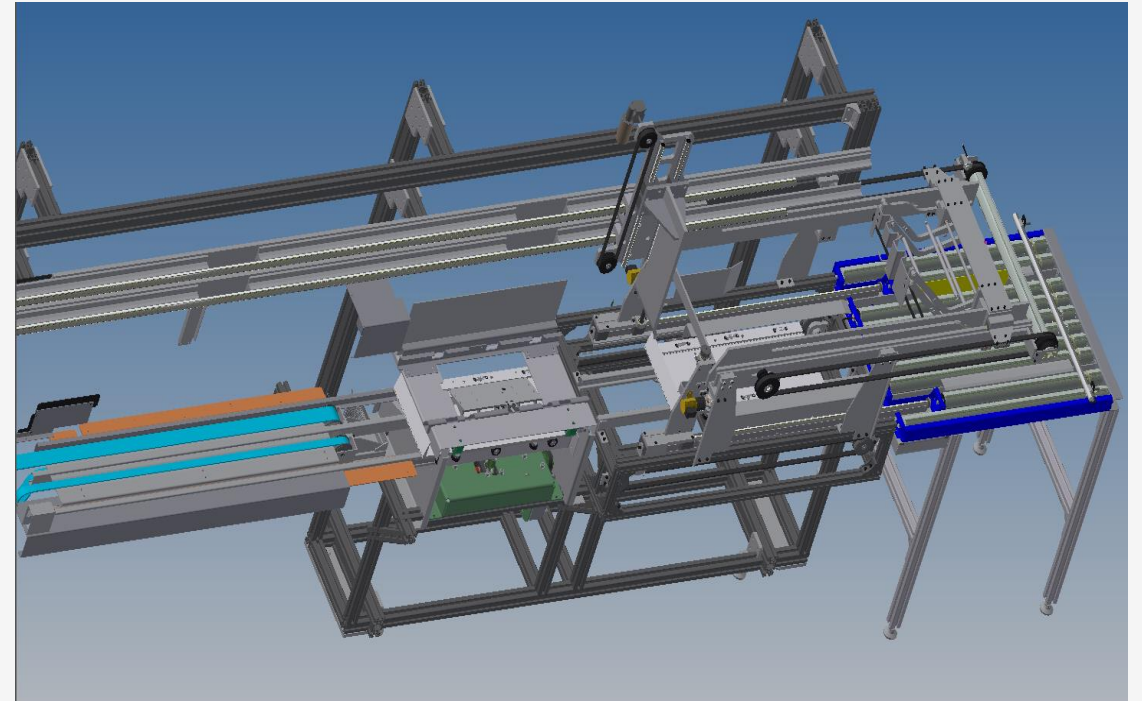
# Our Mechanical Design: Automatic eCommerce storage retrieval solution

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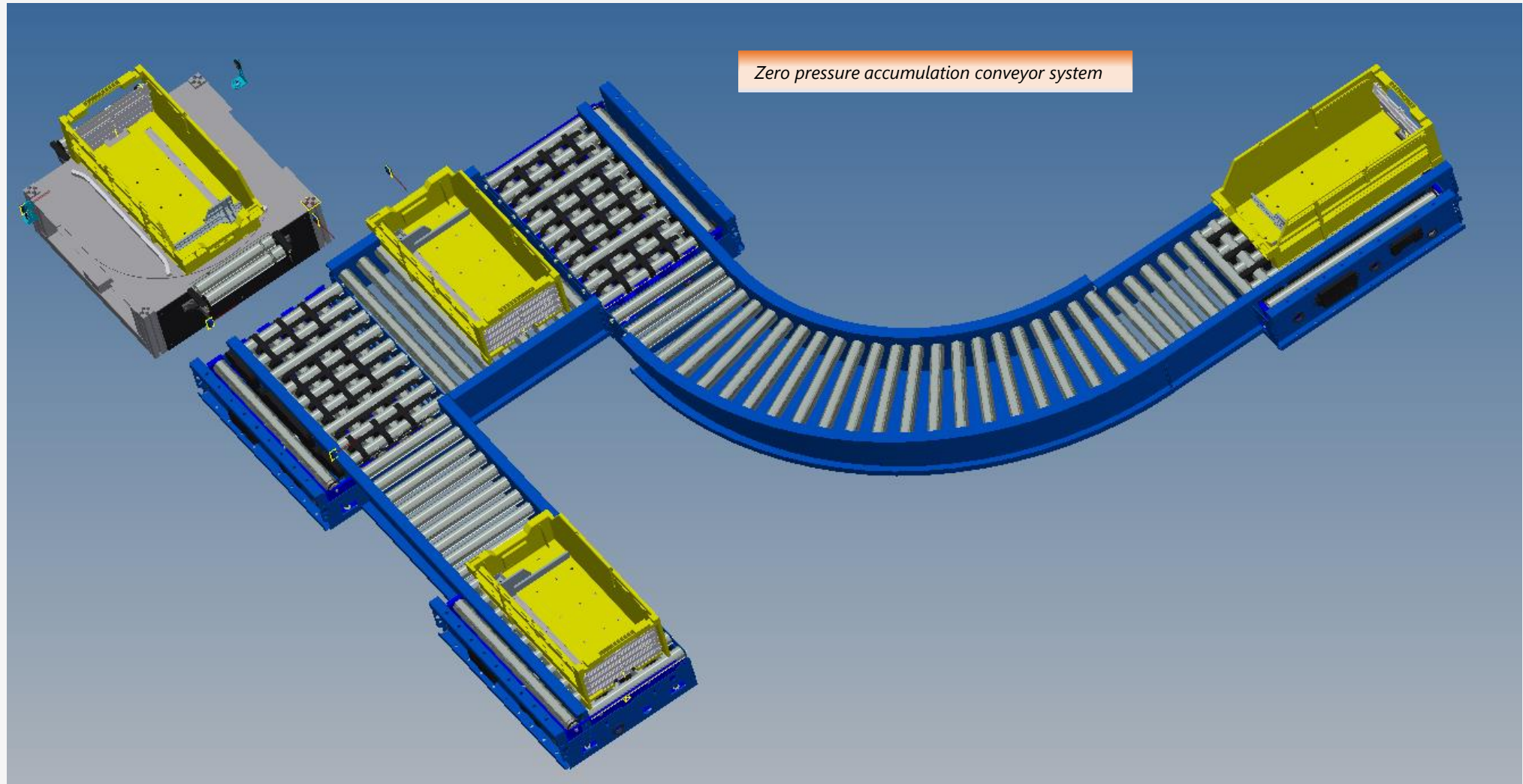
# Our Mechanical Design: Automatic Passport Retrieval and Counter delivery Robot

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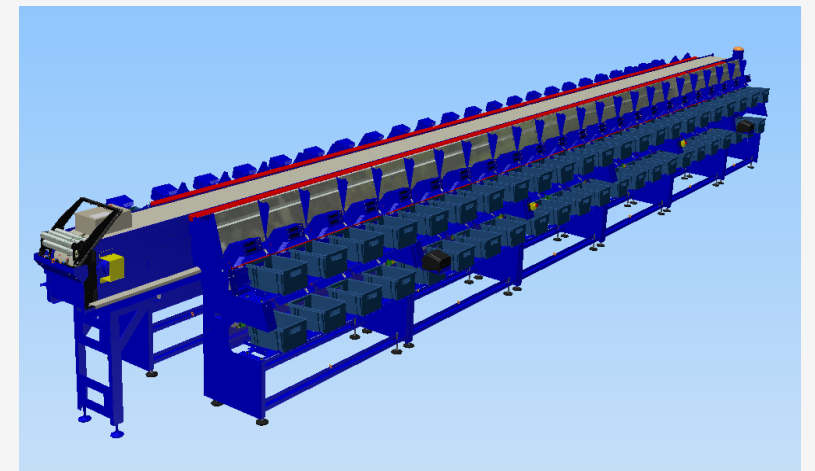
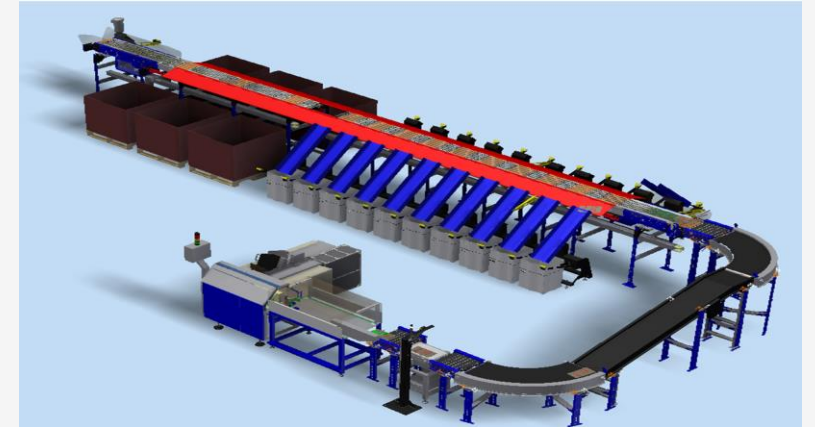
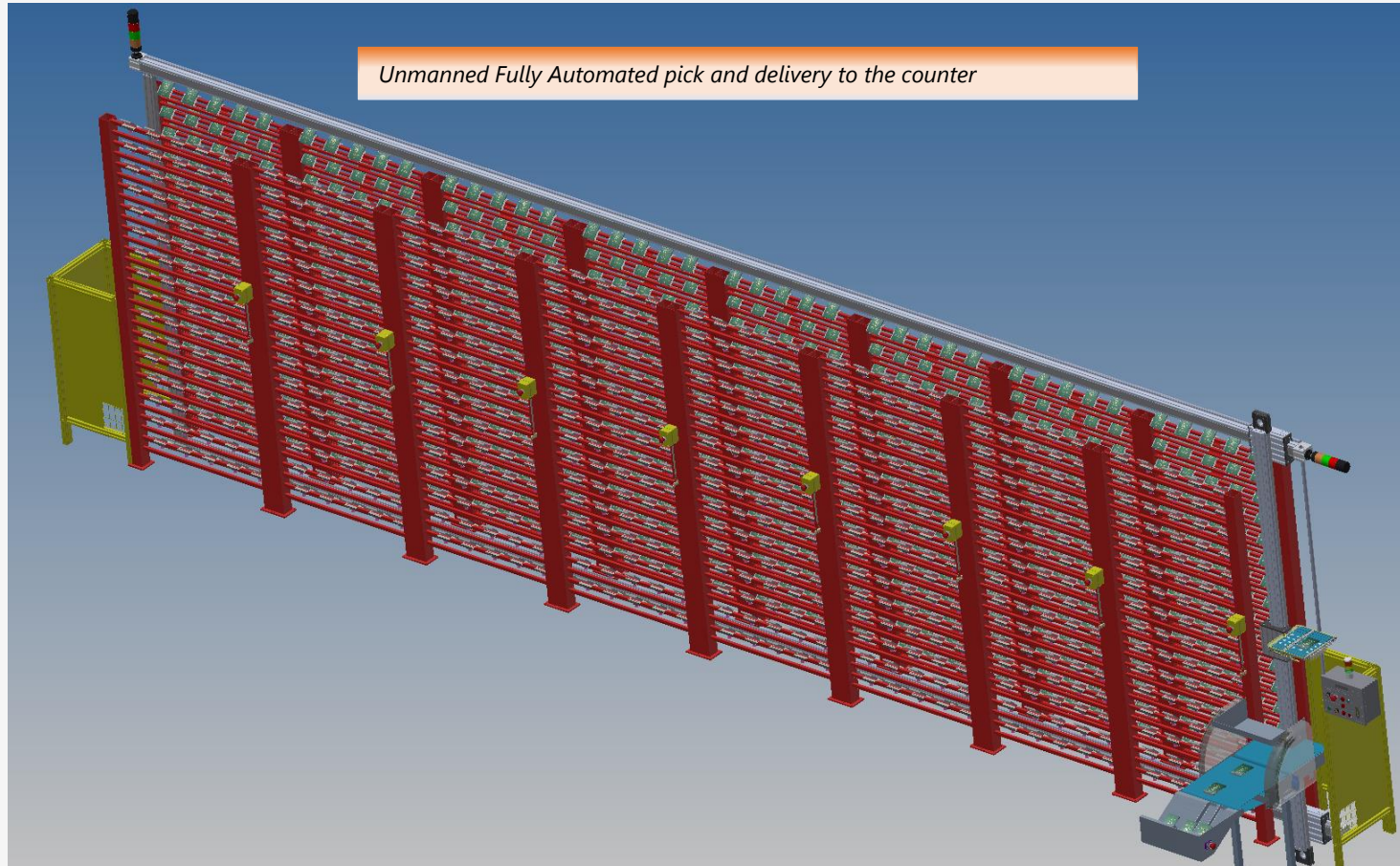


# Our Mechanical Design: Automatic Conveyor system

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# Our Mechanical Design: Automatic Passport Retrieval and Counter delivery Robot and Sorters

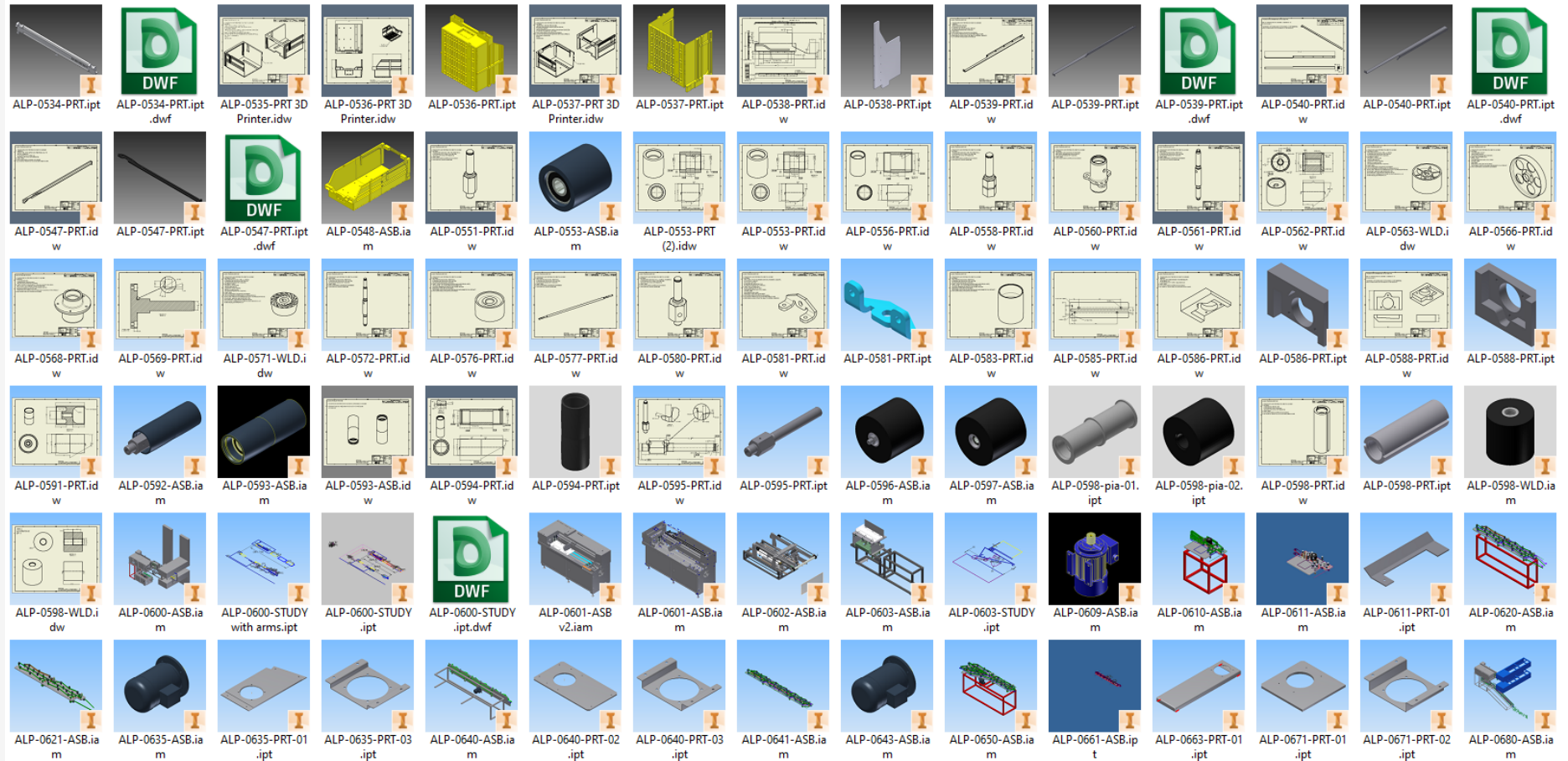




# Our Mechanical Design Components: Some example of Parts

*We have built an extensive library of parts over last 10 years like pulleys, linkages, springs, brackets....*

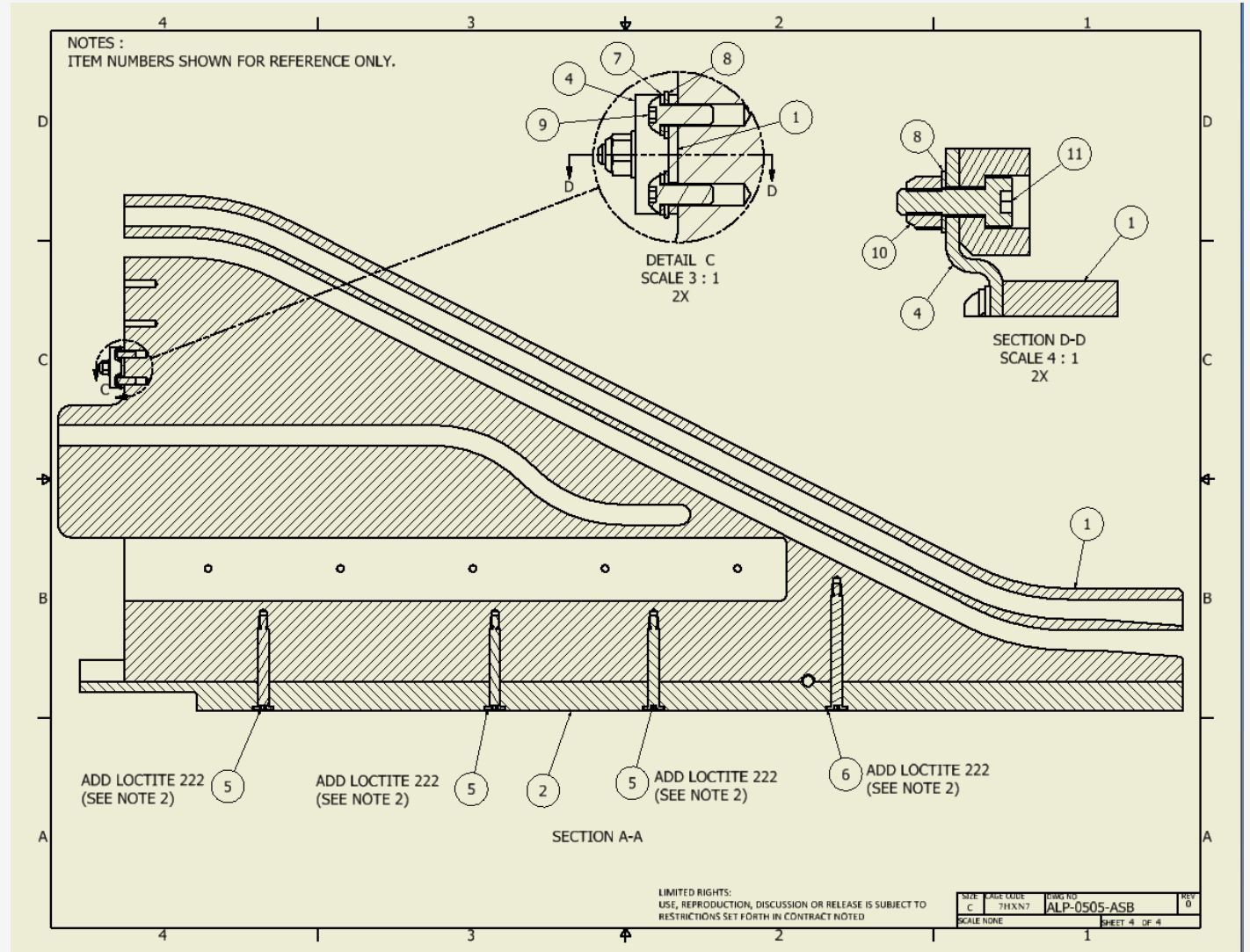
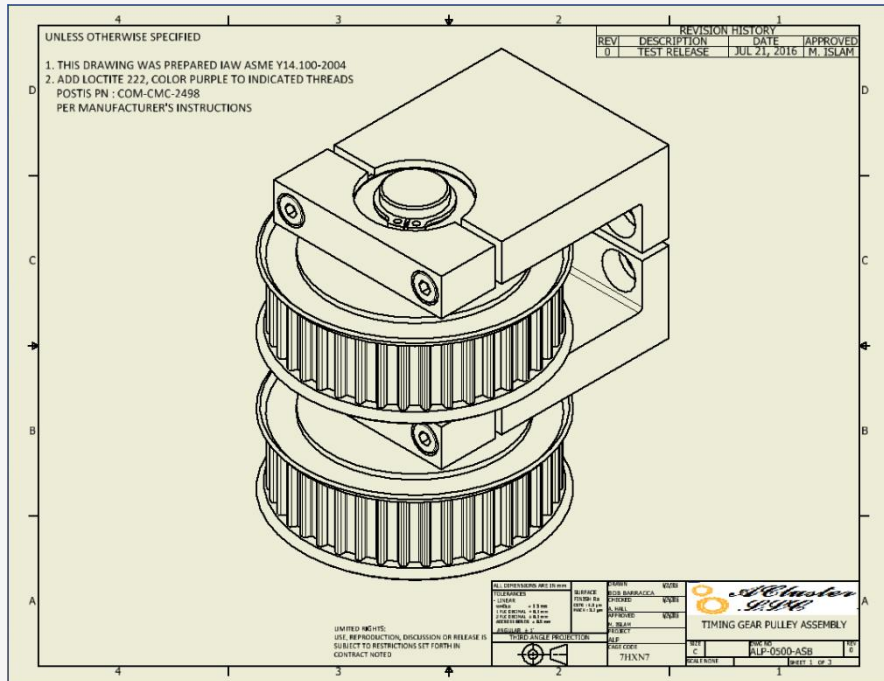
- Our mechanical libraries allow us
  - Model a concept very fast
  - Quick simulation
  - Finite element analysis



# Mechanical Design: Drafting

We follow ASME Y14.100-2004, US standards for all our drawings.

- ❑ We convert our model to the drawings
  - Easy to fabricate



# Project execution: A Farm with outstanding expertise

*It is understood that to execute a complex engineering project client need a qualified design firm capable of integrating a complete solutions. The individual engineers in the firm have previous experience in designing large system for the US Government, Amazon and eCommerce industries in USA.*

## □ Things we do

- Case studies
- Infrastructure layout recommendation
- Project management
- Selection of appropriate technologies
- Produce SOW
- Mechanical System calculation
- Mechanical interface design
- Electrical interface design
- Control interface design
- Software interface design
- Software protocol development
- Quality implementation
- Acceptance test
- Implementation of ECR
- Web interface design
- Produce Training documents
- Train employees



*Our team in USA, We think outside the box !*

# More questions about this presentation?

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## Thank you for your attention

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