# CLPE: Configured Load Planning Engine

## Intelligent Ammunition Storage and Transportation Planning for Efficient and Compliant Space Utilization

COUGAAR SOFTWARE INC.
Human-Collaborative AI Decision Support Systems

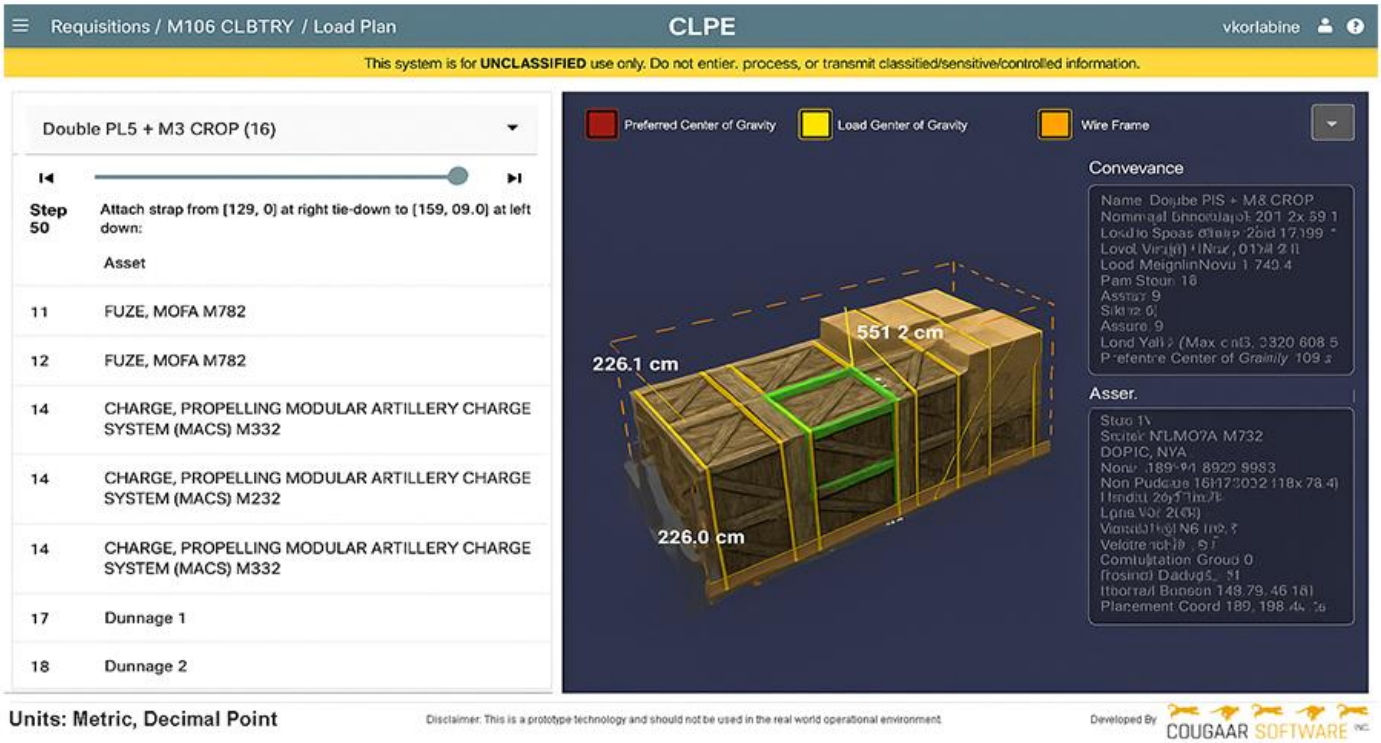
## Summary:


- CLPE is designed for ammunition storage managers, load planners and maneuver units that benefit from automated load planning, efficient space utilization and transportation compliance.
- CLPE uses artificial intelligence (AI) and machine learning (ML) to optimize the arrangement and positioning of ammunition within storage spaces and transportation assets, maximizing capacity and ensuring safe weight distribution.
- CLPE optimizes ammunition storage and transportation. Using 3d spatial knowledge and advanced algorithms to analyze dimensions, weight, hazard compatibility and other factors, CLPE facilitates faster, more accurate and cost-effective ammunition storage and transportation decisions.


CLPE
Your Space Optimized

## Objective:

CLPE's validated application of automation eliminates time-consuming manual processes, quickly and efficiently developing storage plans for ammunition pods and load plans. Using AI and ML, CLPE develops optimal load configurations that take into consideration a comprehensive set of ammunition cargo and transportation factors, including regulatory and procedural constraints. Efficient use of cargo space results in fewer conveyances, containers, pallets, or storage areas being required.




## Capabilities:

- Provides virtual representations of load plans for quick analysis without the need for physical trial and error
- Automates ammunition load planning, reducing time-consuming and error-prone processes and allowing for faster decision-making and planning
- Increases operational effectiveness and reduces storage and transportation costs
- Improves space utilization in storage areas and transportation assets, resulting in fewer transport vehicles, containers, or pallet requirements
- Ensures compliance with space, weight, and safety regulations for storage and transportation
- Quick creation and editing of custom items and containers for load configuration and mode of transportation

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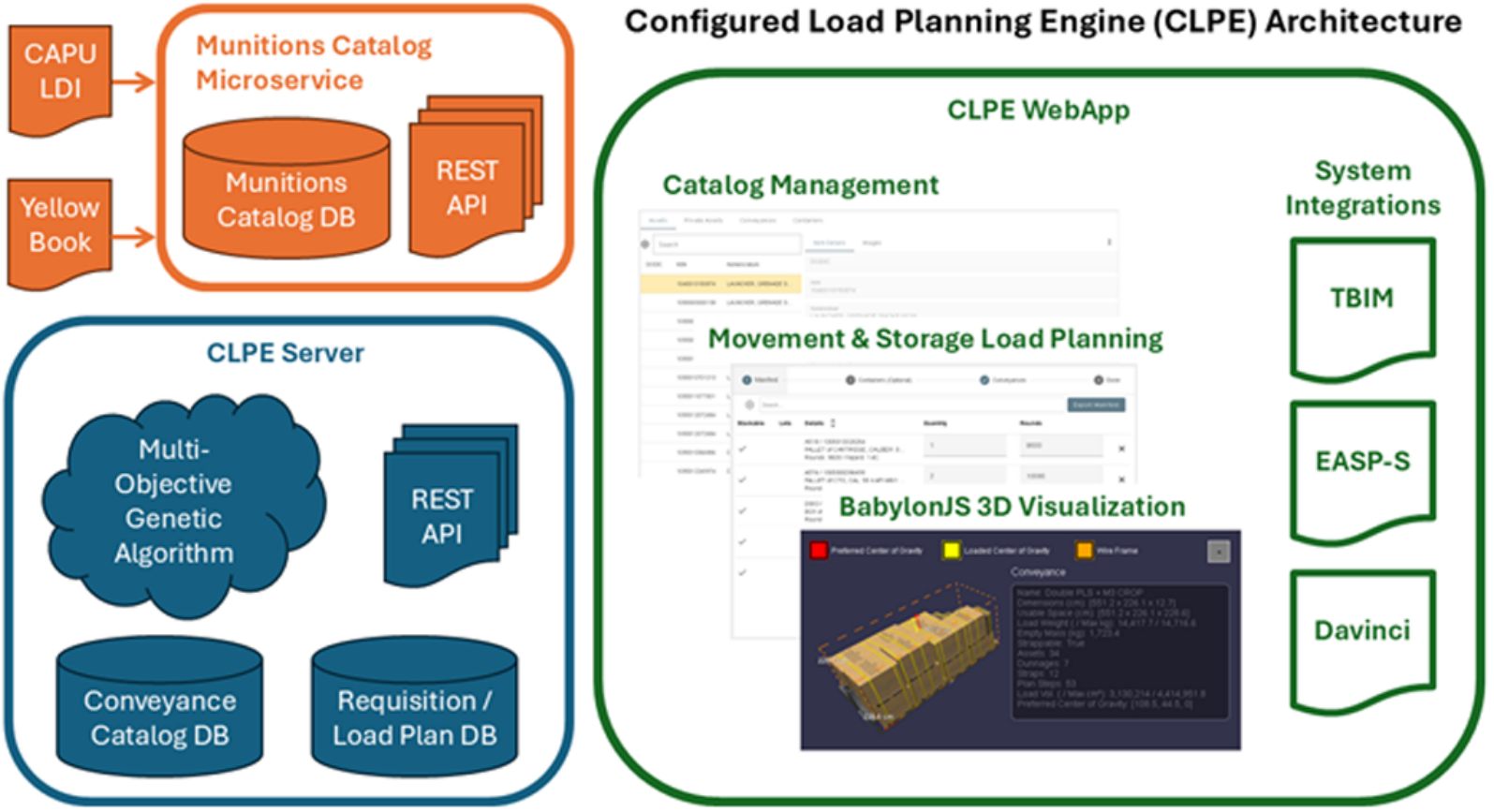


## Technologies:

The Configured Load Planning Engine (CLPE) capability combines state-of-the-art storage and load planning with sophisticated 3D visualization. At the core of the planning engine lies a custom multi-objective genetic algorithm that optimizes space utilization, center of gravity, strapping and dunnage, and cargo priority while respecting constraints such as maximum weight, hazard/compatibility, and stacking restrictions. The planning engine allows for a wide range of user customization from adjusting preferences for grouping (e.g. by DODIC or Lot Number), to changing the hazard/compatibility restrictions or using custom cargo definitions. CLPE displays a planned load in both tabular and fully interactive 3D views that allow the user to see the plan in rich step-by-step detail while visualizing how it would look in real life.

## Benefits & Status:

CLPE is in Year 3 of development under a US Army Other Transaction Agreement (OTA) with the National Advanced Mobility Consortium (NAMC).

## POCs:


PI and Technical POC: Dr. Todd Carrico | tcarrico@cougaarsoftware.com | 703-593-0152
Contract POC: Mr. Eric Martin | emartin@cougaarsoftware.com | 703-309-5583